STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

OFFICE OF THE
SECRETARY

PHONE: (302) 739-9000
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November 21, 2016

Mr. Shawn M. Garvin (3RA00)
Regional Administrator
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Garvin:

I am pleased to submit the enclosed revision to the State of Delaware State Implementation Plan (SIP). The revision is to add to the SIP a document titled, "Revision to Satisfy EPA's State Implementation Plan (SIP) Call Related to Air Emissions During Equipment Start-up and Shutdown," and amendments to the following 7 DE Admin Codes:

- 1104 - PARTICULATE EMISSIONS FROM FUEL BURNING EQUIPMENT, Section 1 – "General Provisions" and Section 2 – "Emission Limits"
- 1105 - PARTICULATE EMISSIONS FROM INDUSTRIAL PROCESS OPERATIONS – Sections 1.0 – "General Provisions", Section 2.0 – "General Restrictions", Section 4.0 – "Restrictions on Secondary Metal Operations"; Section 5 – "Restrictions on Petroleum Refining Operations"
- 1124- CONTROL OF VOLATILE ORGANIC COMPOUND EMISSIONS, Section 1.0 – "General Provisions"
- 1142 - SPECIFIC EMISSION CONTROL REQUIREMENTS, Section 1.0 – "Control of NOx Emissions from Industrial Boilers", Section 2 – "Control of NOx Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries"

These amendments are to satisfy the US EPA requirements related to air emissions during equipment start-ups and shutdown as required by EPA SIP Call (80 FR 33840). The effective date of these amendments is January 11, 2017.

The requirements of the CAA Section 110(a)(2)(A) have been met through the normal public hearing process established by the State of Delaware with proper notification (30 days) prior to the convening of the public hearing. Attachments A and B are copies of affidavits as proof of proper notification. It is the position of the State of Delaware that all minimum requirements set forth in the 1990 Clean Air Act Amendments have been met.

Also enclosed with this submittal is a CD, which contains an exact duplicate of the hard copy material, submitted with this SIP revision package.

We look forward to continuing the cooperative effort between Delaware and EPA in this important work. As always, feel free to contact me or Ali Mirzakhalili, Director, Division of Air Quality, (302) 739-9402, if you have any questions concerning the enclosed documents.

Sincerely,

David S. Small
Secretary

Enclosures

cc: Cristina Fernandez, EPA w/encl.
Ali Mirzakhalili

Final

Delaware

State Implementation Plan Revision

Revision to Satisfy EPA's State Implementation Plan (SIP) Call Related to Air Emissions During Equipment Start-up and Shutdown

Submitted To

U.S. Environmental Protection Agency

Submitted By

Delaware Department of Natural Resources and Environmental Control

November 10, 2016

1. Introduction

On June 12, 2015 the EPA, identified the State Implementation Plans (SIPs) of 36 states as inadequate because they allegedly allowed unregulated excess emissions (80 FR 33840). Seven Delaware regulations were cited in this SIP Call because the EPA believes the regulations do not appropriately restrict emissions during start-up or shutdown events. The seven Delaware regulations are: 7 DE Admin. Codes 1104, 1105, 1108, 1109, 1114, 1124 and 1142.

Delaware does not agree with the EPA for the reasons cited in the comments Delaware made to the EPA docket. Despite this disagreement Delaware is revising the Delaware's SIP to comport with the EPA SIP Call to ensure the State is not subject to punitive CAA sanctions. This document details the revisions Delaware is making to the SIP, and demonstrates that these revisions comport with the EPA's interpretation of the CAA and are consistent with the EPA's approach for attainment and maintenance of all National Ambient Air Quality Standards (NAAQS).

2. SIP Revision and Impact Analysis

2.1. 7 DE Admin. Code 1104, Particulate Emissions from Fuel Burning Equipment

2.1.1. Delaware requests that EPA revise 7 DE Admin. Code 1104, Particulate Emissions from Fuel Burning Equipment, in the Delaware SIP as follows[1]:

~~1.5 The provisions of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of 2.0 of 7 **DE Admin. Code** 1102.~~

2.1 Reserved~~No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum two-hour average, from any fuel burning equipment~~.

2.2 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum 30-day rolling average, from any fuel burning equipment.

2.1.2. Impact on attainment and maintenance of NAAQS. This revision provides the opportunity for any subject source to compensate for higher emission rates during startup or shutdown events by operating at corresponding lower rates during normal operations, so long as continuous compliance is demonstrated on a 30-day rolling average basis. This revision does not change the existing

[1] Along with the new provision (i.e., 2.2) the two provisions that are removed from the SIP (i.e., 1.5 and 2.1) will be retained and enforced by Delaware through the State regulation.

continuous emission limit in the SIP, nor will it result in any increase in emissions on a tons per year basis.

2.2. 7 DE Admin. Code 1105, Particulate Emissions from Industrial Process Operations

2.2.1. Delaware requests that EPA revise 7 DE Admin. Code 1105 Particulate Emissions from Industrial Process Operations, in the Delaware SIP as follows[2]:

~~1.7 The provisions of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of 2.0 of 7 **DE Admin. Code** 1102.~~

2.1 Reserved~~No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot~~.

2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30-day rolling average basis.

2.2.2. Impact on attainment and maintenance of NAAQS. This revision provides the opportunity for any subject source to compensate for higher emission rates during startup or shutdown events by operating at corresponding lower rates during normal operations, so long as continuous compliance is demonstrated on a 30-day rolling average basis. This revision does not change the existing continuous emission limit in the SIP, nor will it result in any increase in emissions on a tons per year basis.

2.3. 7 DE Admin. Code 1108, Sulfur Dioxide Emissions from Fuel Burning Equipment. For 7 DE Admin. Code 1108 the provision EPA identified as deficient (i.e., 1.2) was removed from the Regulation under Secretary's Order (2013-A-0021), which was signed on 6/11/2013 and submitted to the EPA as a SIP revision. Since this SIP Call only deals with 1.2 of 1108, and since the revised regulation which does not include 1.2 was submitted to the EPA as a SIP revision, no further action is required under this SIP Call by Delaware relative to 7 DE Admin. Code 1108.

Since the cited provision has been removed from the Delaware Regulation, and because the EPA has indicated the cited provision allows for excess emissions,

[2] Along with the new provision (i.e., 2.2) the two provisions that are removed from the SIP (i.e., 1.7 and 2.1) will be retained and enforced by Delaware though the State regulation.

this revision comports with the EPA's interpretation of the CAA and is consistent with the EPA's approach for attainment and maintenance of all National Ambient Air Quality Standards (NAAQS).

2.4. 7 DE Admin. Code 1109, Emissions of Sulfur Compounds from Industrial Operations. For 7 DE Admin. Code 1109 Delaware requests that the EPA remove the entire regulation from the Delaware SIP [3].

Delaware believes existing federal requirements like, for example, New Source Performance Standards are adequate to ensure attainment and maintenance of sulfur related NAAQS in Delaware. Delaware believes that removal of this regulation from the SIP will not result in any increase in emissions on a ton per year basis, and that this revision comports with the EPA's interpretation of the CAA and is consistent with the EPA's approach for attainment and maintenance of all NAAQS.

2.5. 7 DE Admin. Code 1114, Visible Emissions. For 7 DE Admin. Code 1114 Delaware requests that the EPA remove the entire regulation from the Delaware SIP [4].

Delaware believes existing federal requirements like, for example, New Source Performance Standards regulate visible emissions, plus other Delaware SIP regulations that regulate fine particulate matter and fine particulate matter precursors (e.g., 1108 and 1146) are adequate to ensure attainment and maintenance of any particulate related NAAQS in Delaware. Further, there is no quantifiable relationship between visibility emissions and fine particulate matter emissions. Delaware believes that removal of this regulation from the SIP will not result in any increase in emissions on a ton per year basis, and that this revision comports with the EPA's interpretation of CAA and is consistent with the EPA's approach for attainment and maintenance of all NAAQS.

2.6. 7 DE Admin. Code 1124, Control of Volatile Organic Compound Emissions. For 7 DE Admin. Code 1124 Delaware requests that the EPA remove the provision EPA identified as deficient (1.4) from the Delaware SIP as follows:

1.4 Reserved~~The provisions of this regulation shall not apply to the startup and shutdown of equipment which operates continuously or in an extended steady-state when emissions from such equipment during startup and shutdown are governed by an Operating Permit issued pursuant to the provisions of 2.0 of **7 DE Admin. Code 1102**~~.

[3] The regulation will be retained and enforced by Delaware.
[4] The regulation will be retained and enforced by Delaware.

Since the cited provision has been removed from the Delaware Regulation, and because the EPA has indicated the cited provision allows for excess emissions, this revision should be considered as strengthening the SIP and one which comports with the EPA's interpretation of the CAA and is consistent with EPA's approach for attainment and maintenance of all NAAQS.

2.7. 7 DE Admin. Code 1142, Section 2.0, Control of NOx Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries. For 7 DE Admin. Code 1142 Delaware requests that the EPA remove the provision EPA identified as deficient (2.3.1.6) from the Delaware SIP as follows:

2.3.1.6 Reserved~~The standards set out in 2.3 of this regulation shall not apply to the start-up and shutdown of equipment when emissions from such equipment during a start-up and shutdown are addressed in an operation permit issued pursuant to the provisions of 7 **DE Admin.** Code 1102~~.

Since the cited provision has been removed from the Delaware Regulation, and because the EPA has indicated the cited provision allows for excess emissions, this revision should be considered as strengthening the SIP and one which comports with the CAA and is consistent with EPA's approach for attainment and maintenance of all NAAQS.

3. Conclusion

Based on the analysis in the previous section of this document, Delaware concludes that this regulatory revision including the identified SIP revision will not have any adverse impact on Delaware's overall efforts for attaining and maintaining all NAAQS. Therefore, this SIP revision and its analysis meet the anti-backsliding provision of CAA Sec. 110(1).

Proposal

Delaware

State Implementation Plan Revision

Revision to Satisfy EPA's State Implementation Plan (SIP) Call Related to Air Emissions During Equipment Start-up and Shutdown

Submitted To

U.S. Environmental Protection Agency

Submitted By

Delaware Department of Natural Resources and Environmental Control

September 15, 2016

1. Introduction

On June 12, 2015 the EPA, identified the State Implementation Plans (SIPs) of 36 states as inadequate because they allegedly allowed unregulated excess emissions (80 FR 33840). Seven Delaware regulations were cited in this SIP Call because the EPA believes the regulations do not appropriately restrict emissions during start-up or shutdown events. The seven Delaware regulations are: 7 DE Admin. Codes 1104, 1105, 1108, 1109, 1114, 1124 and 1142.

Delaware does not agree with the EPA for the reasons cited in the comments Delaware made to the EPA docket. Despite this disagreement Delaware is revising the Delaware's SIP to comport with the EPA SIP Call to ensure the State is not subject to punitive CAA sanctions. This document details the revisions Delaware is making to the SIP, and demonstrates that these revisions comport with the EPA's interpretation of the CAA and are consistent with the EPA's approach for attainment and maintenance of all National Ambient Air Quality Standards (NAAQS).

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2.2 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum 30-day rolling average, from any fuel burning equipment.

2.1.2. Impact on attainment and maintenance of NAAQS. This revision provides the opportunity for any subject source to compensate for higher emission rates during startup or shutdown events by operating at corresponding lower rates during normal operations, so long as continuous compliance is demonstrated on a 30-day rolling average basis. This revision does not change the existing

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continuous emission limit in the SIP, nor will it result in any increase in emissions on a tons per year basis.

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Since the cited provision has been removed from the Delaware Regulation, and because the EPA has indicated the cited provision allows for excess emissions, this revision comports with the EPA's interpretation of the CAA and is consistent

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with the EPA's approach for attainment and maintenance of all National Ambient Air Quality Standards (NAAQS).

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Delaware believes existing federal requirements like, for example, New Source Performance Standards are adequate to ensure attainment and maintenance of sulfur related NAAQS in Delaware. Delaware believes that removal of this regulation from the SIP will not result in any increase in emissions on a ton per year basis, and that this revision comports with the EPA's interpretation of the CAA and is consistent with the EPA's approach for attainment and maintenance of all NAAQS.

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Delaware believes existing federal requirements like, for example, New Source Performance Standards regulate visible emissions, plus other Delaware SIP regulations that regulate fine particulate matter and fine particulate matter precursors (e.g., 1108 and 1146) are adequate to ensure attainment and maintenance of any particulate related NAAQS in Delaware. Further, there is no quantifiable relationship between visibility emissions and fine particulate matter emissions. Delaware believes that removal of this regulation from the SIP will not result in any increase in emissions on a ton per year basis, and that this revision comports with the EPA's interpretation of CAA and is consistent with the EPA's approach for attainment and maintenance of all NAAQS.

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Since the cited provision has been removed from the Delaware Regulation, and because the EPA has indicated the cited provision allows for excess emissions,

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this revision should be considered as strengthening the SIP and one which comports with the EPA's interpretation of the CAA and is consistent with EPA's approach for attainment and maintenance of all NAAQS.

2.7. 7 DE Admin. Code 1142, Section 2.0, Control of NOx Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries. For 7 DE Admin. Code 1142 Delaware requests that the EPA remove the provision EPA identified as deficient (2.3.1.6) from the Delaware SIP as follows:

2.3.1.6 Reserved~~The standards set out in 2.3 of this regulation shall not apply to the start-up and shutdown of equipment when emissions from such equipment during a start-up and shutdown are addressed in an operation permit issued pursuant to the provisions of 7 **DE Admin.** Code 1102~~.

Since the cited provision has been removed from the Delaware Regulation, and because the EPA has indicated the cited provision allows for excess emissions, this revision should be considered as strengthening the SIP and one which comports with the CAA and is consistent with EPA's approach for attainment and maintenance of all NAAQS.

3. Conclusion

Based on the analysis in the previous section of this document, Delaware concludes that this regulatory revision including the identified SIP revision will not have any adverse impact on Delaware's overall efforts for attaining and maintaining all NAAQS. Therefore, this SIP revision and its analysis meet the anti-backsliding provision of CAA Sec. 110(1).

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

OFFICE OF THE
SECRETARY

PHONE: (302) 739-9000
FAX: (302) 739-6242

Secretary's Order No.: 2016-A-0047

RE: Approving Final Amendments to the following existing Delaware Regulations: (1) 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; (2) 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; (3) 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; (4) 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*"; and correlating Final Revisions to Delaware's State Implementation Plan ("SIP") to address the Start-up, Shutdown, and Malfunction SIP Call of the United States Environmental Protection Agency (U.S. EPA)

Date of Issuance: November 21, 2016

Effective Date of the Amendment: January 11, 2017

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") pursuant to 7 *Del.C.* §§6006, 6010, the following findings of fact based on the record, reasons and conclusions are entered as an Order of the Secretary in the above-referenced regulatory proceeding.

Background, Procedural History and Findings of Fact

This Order relates to the proposed Revisions to the Delaware State Implementation Plan ("SIP") to address the Start-up, Shutdown, and Malfunction ("SSM") SIP Call of the United States Environmental Protection Agency ("USEPA", "EPA") of June 12, 2015 (see 80 FR 33840). As a result of a petition to EPA by the

Sierra Club, the EPA has identified thirty-six (36) states with inadequate SIPs as they relate to SSM activities. EPA has specifically identified seven (7) existing Delaware rules in the SIP Call. The seven Delaware regulations cited by EPA were 7 DE Admin. Code §§ 1104, 1105, 1108, 1109, 1114, 1124, and 1142. As a result, Delaware is proposing revisions to four of these regulations, as follows, to wit: 7 DE Admin. Code §§ 1104, 1105, 1124 and 1142.

While the three remaining regulations noted above (7 DE Admin. Code §1108, 1109, and 1114) are also part of the aforementioned SIP Call, the Department is not proposing revisions to the same at this time. 7 DE Admin. Code §§ 1109 and 1114 are at this present time being removed from the SIP. With regard to 7 DE Admin. Code §1108, the Department had already removed the offending SSM language when that regulation was last revised in 2013. As such, the Department is formally addressing all three of these remaining regulations, but not proposing any amendments to the same as part of this present action.

It should be noted that the Department received comments prior to the public hearing of October 25, 2016 from both the Sierra Club and the EPA on the aforementioned proposed regulatory Amendments and SIP revisions. As noted within the Department's Technical Response Memorandum ("TRM") prepared in this matter by the Division of Air Quality ("DAQ"), Delaware does not agree that its SIP is deficient. Despite this disagreement, the Department has proposed these Amendments to both its regulations and SIP as referenced above, to avoid the imposition of potential federal Clean Air Act ("CAA") sanctions. Delaware has designed the proposed revisions to (1) remove the Director's discretion provisions from the SIP that EPA believes fail to

comply with the CAA, (2) comport with EPA guidance and the regulatory structure the EPA has established in other actions, and (3) maintain the elements removed from the SIP as State-only requirements, because Delaware believes the conditions are necessary to administer good air quality management policy. Further, Delaware believes that, from an environmental perspective, the proposed revisions do not reflect any changes because the proposal retains the disputed provisions as State-enforceable-only provisions. Lastly, Delaware opines that, from EPA's perspective, the removal of the offending provisions from the SIP should be considered as SIP strengthening, thus approvable and non-controversial.

The Department has the statutory basis and legal authority to act with regard to the proposed regulatory Amendments and SIP revisions as referenced above, pursuant to 7 *Del.C.*, Chapter 60. The aforementioned proposed Amendments and SIP revisions were initially published in the October 1, 2016 edition of the *Delaware Register of Regulations*, and were presented and thoroughly vetted by the Department at the public hearing held on October 25, 2016. Members of the public attended that hearing, however, no comment was received by the Department at that time. Consistent with 29 *Del.C.* §10118(a), the public hearing record remained open for public comment through November 9, 2016, however, none was received during the post-hearing phase of this promulgation. All proper notification and noticing requirements concerning the aforementioned regulatory Amendments and proposed SIP revisions were met by the Department in this matter.

The Department's presiding hearing officer, Lisa A. Vest, prepared a Hearing Officer's Report dated November 21, 2016 ("Report"). The Report documents the proper completion of the required regulatory amendment process, establishes the record, and recommends the adoption of the proposed regulatory Amendments and SIP revisions as attached to the Report as Appendix "B".

Reasons and Conclusions

Based on the record developed by the Department's experts and established by the Hearing Officer's Report, I find that the proposed Amendments to the following existing Delaware regulations: (1) 7 DE Admin. Code 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; (2) 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; (3) 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; (4) 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", as well as the proposed revisions to the Delaware SIP, are well-supported. Therefore, the recommendations of the Hearing Officer are hereby adopted, and I direct that the same be promulgated as final.

I find that the Department's experts in the Division of Air Quality fully developed the record to support adoption of both the aforementioned regulatory Amendments and SIP revisions. The promulgation of the regulatory Amendments and proposed SIP revisions referenced above will enable the Department to (1) remove the Director's discretion provisions from the SIP that EPA believes fail to comply with the CAA; (2) comport with EPA guidance and the regulatory structure the EPA has established in other actions; (3) maintain the elements removed from the SIP as State-only requirements

because Delaware believes the conditions are necessary to administer good air quality management policy, as referenced above; and (4) avoid the imposition of CAA sanctions.

In conclusion, the following reasons and conclusions are entered:

1. The Department has the statutory basis and legal authority to act with regard to the proposed amendments to 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; and 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", as well as the proposed revisions to the Delaware SIP, pursuant to 7 *Del.C.*, Ch. 60;

2. The Department has jurisdiction under its statutory authority, pursuant to 7 *Del.C.*, Ch. 60, to issue an Order adopting these proposed regulatory amendments and SIP revisions as final;

3. The Department provided adequate public notice of the proposed regulatory amendments and SIP revisions, and all proceedings in a manner required by the law and regulations, provided the public with an adequate opportunity to comment on the proposed regulatory amendments and SIP revisions, including at the time of the public hearing held on October 25, 2016, and held the record open through close of business on November 9, 2016, consistent with 29 *Del.C.* §10118(a), in order to consider public comment on these proposed regulatory amendments before making any final decision;

4. The Department's Hearing Officer's Report, including its established record and the aforementioned recommended regulatory Amendments and proposed SIP revisions as set forth in Appendix "B", are hereby adopted to provide additional reasons and findings for this Order;

5. Promulgation of the aforementioned regulatory Amendments and proposed SIP revisions will enable the Department to (1) remove the Director's discretion provisions from the SIP that EPA believes fail to comply with the CAA; (2) comport with EPA guidance and the regulatory structure the EPA has established in other actions; (3) maintain the elements removed from the SIP as State-only requirements because Delaware believes the conditions are necessary to administer good air quality management policy, as referenced above; and (4) avoid the imposition of CAA sanctions;

6. The Department has reviewed these proposed regulatory amendments in the light of the Regulatory Flexibility Act, consistent with 29 *Del.C.* Ch. 104 (version applicable to all regulations initially published on or after January 1, 2016), and has selected Exemption "B5" regarding same, as the proposed regulation Amendments are required by federal law. Moreover, the Department believes these proposed regulatory Amendments to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally;

7. The Department's proposed SIP revision, as published in the October 1, 2016 *Delaware Register of Regulations*, and as set forth in Appendix "B" as noted above, is adequately supported, is not arbitrary or capricious, and is consistent with the applicable laws and regulations. Consequently, they are approved as final regulatory

amendments, which shall go into effect ten days after its publication in the next available issue of the *Delaware Register of Regulations*; and

8. The Department shall submit this Order approving as final regulatory amendments to 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; and 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", as well as the proposed revisions to the Delaware SIP, to the *Delaware Register of Regulations* for publication in its next available issue, and provide such other notice as the law and regulation require and the Department determines is appropriate.

David S. Small
Secretary

Attachment A

INDEPENDENT NEWSMEDIA INC. USA

110 Galaxy Drive • Dover. DE • 19901 • 1-800-282-8586

State of Delaware:

County of Kent:

Before me, a Notary Public, for the County and State aforesaid, Edward Dulin, known to me to be such, who being sworn according to law deposes and says that he is President of Independent Newsmedia Inc. USA, the publisher of the **Delaware State News**, a daily newspaper published at Dover, County of Kent, and State of Delaware, and that the notice, a copy of which is hereto attached, as published in the **Delaware State News** in its issue of September 18, 2016.

President
Independent Newsmedia Inc. USA

Sworn to and subscribed before me this 18th

Day of September A.D. 2016

JANET E. LEVY NOTARY PUBLIC MY COMMISSION EXPIRES ON 09-20-17 STATE OF DELAWARE

Janet Levy
Notary Public

INDEPENDENT NEWSMEDIA INC. USA

110 Galaxy Drive • Dover, DE • 19901 • 1-800-282-8586

State of Delaware:

County of Kent:

Before me, a Notary Public, for the County and State aforesaid, Edward Dulin, known to me to be such, who being sworn according to law deposes and says that he is President of Independent Newsmedia Inc. USA, the publisher of the **Delaware State News**, a daily newspaper published at Dover, County of Kent, and State of Delaware, and that the notice, a copy of which is hereto attached, as published in the **Delaware State News** in its issue of September 18, 2016.

President
Independent Newsmedia Inc. USA

Sworn to and subscribed before me this 18th

Day of September A.D. 2016

JANET E. LEVY NOTARY PUBLIC MY COMMISSION EXPIRES ON 09-20-17 STATE OF DELAWARE

Janet Levy
Notary Public

DNREC – Division of Air Quality

LEGAL NOTICE

PUBLIC HEARING

The Department of Natural Resources and Environmental Control (DNREC), Division of Air Quality (DAQ) will conduct two public hearings on proposed amendments to Delaware air regulations and Delaware's State Implementation Plan (SIP). The hearings will address amendments to 7 DE Admin. Code 1125 regarding the calculation of greenhouse gas (GHG) emissions and to 7 DE Admin. Codes 1104, 1105, 1124 and 1142 to satisfy US EPA requirements related to air emissions during equipment start-up and shutdown as required by EPA's SIP Call (80 FR 33840). The hearings will be held on Tuesday, October 25, 2016 beginning at 6:00 PM at the State Street Commons Training Room, 100 W. Water Street, Suite 6A, Dover, Delaware. The first of the two hearings will begin at 6:00 PM, followed by the second hearing at the conclusion of the first.

The proposed amendments are available for public review at the Department's offices at 715 Grantham Lane in New Castle, DE and 100 West Water Street, Suite 6A in Dover, DE. They also will be available in the October 1, 2016 edition of the Delaware Register of Regulations at http://regulations.delaware.gov/services/register.shtml. Please contact David Fees at (302) 739-9402 to make an appointment to inspect the proposed amendments.

Statements and testimony may be presented either orally or in writing at the public hearings. If you are unable to attend or wish to submit your comments in advance of the public hearings, please send your comments to the address below. Interested parties also may submit written comments to the Department, to the same address below, up until the end of the comment period, which will extend through November 9, 2016, unless a longer comment period is designated by the hearing officer at the public hearing.

DNREC – Division of Air Quality
Subject: October 25 Public Hearings
100 W. Water Street, Suite 6A
Dover, DE 19904

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139864 DSN 9/18/2016

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09/18/16 **A.D 2016**

Sherry Ann Salvia
Sworn and subscribed before me, this 18 day of September, 2016

Linda Barber

SHERRY ANN SALVIA
MY COMMISSION EXPIRES ON February 18, 2017
NOTARY PUBLIC
NEW CASTLE COUNTY, STATE OF DELAWARE

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DNREC/DIVISION OF AIR QUALITY

LEGAL NOTICE

PUBLIC HEARING

The Department of Natural Resources and Environmental Control (DNREC), Division of Air Quality (DAQ) will conduct two public hearings on proposed amendments to Delaware air regulations and Delaware's State Implementation Plan (SIP). The hearings will address amendments to 7 DE Admin. Code 1125 regarding the calculation of greenhouse gas (GHG) emissions and to 7 DE Admin. Codes 1104, 1105, 1124 and 1142 to satisfy US EPA requirements related to air emissions during equipment start-up and shutdown as required by EPA's SIP Call (80 FR 33840). The hearings will be held on Tuesday, October 25, 2016 beginning at 6:00 PM at the State Street Commons Training Room, 100 W. Water Street, Suite 6A, Dover, Delaware. The first of the two hearings will begin at 6:00 PM, followed by the second hearing at the conclusion of the first.

The proposed amendments are available for public review at the Department's offices at 715 Grantham Lane in New Castle, DE and 100 West Water Street, Suite 6A in Dover, DE. They also will be available in the October 1, 2016 edition of the Delaware Register of Regulations at http://regulations.delaware.gov/services/register.shtml. Please contact David Fees at (302) 739-9402 to make an appointment to inspect the proposed amendments.

Statements and testimony may be presented either orally or in writing at the public hearings. If you are unable to attend or wish to submit your comments in advance of the public hearings, please send your comments to the address below. Interested parties also may submit written comments to the Department, to the same address below, up until the end of the comment period, which will extend through November 9, 2016, unless a longer comment period is designated by the hearing officer at the public hearing.

DNREC – Division of Air Quality
Subject: October 25 Public Hearings
100 W. Water Street, Suite 6A
Dover, DE 19904

THIS IS THE ONLY TIME THIS NOTICE WILL APPEAR

9/18-NJ

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF AIR QUALITY
State Street Commons
100 W. Water Street, Suite 6A
DOVER, DELAWARE 19904

Telephone: (302) 739 - 9402
Fax No.: (302) 739 - 3106

CERTIFICATION
November 21, 2016

I hereby certify that a public hearing was held October 25, 2016, on revisions to the State of Delaware State Implementation Plan. The revision is to add to the SIP a document titled, "Revision to Satisfy EPA's State Implementation Plan (SIP) Call Related to Air Emissions During Equipment Start-up and Shutdown," and amendments to the following 7 DE Admin Codes:

- 1104 - PARTICULATE EMISSIONS FROM FUEL BURNING EQUIPMENT, Section 1 – "General Provisions" and Section 2 – "Emission Limits"
- 1105 - PARTICULATE EMISSIONS FROM INDUSTRIAL PROCESS OPERATIONS – Sections 1.0 – "General Provisions", Section 2.0 – "General Restrictions", Section 4.0 – "Restrictions on Secondary Metal Operations"; Section 5 – "Restrictions on Petroleum Refining Operations"
- 1124- CONTROL OF VOLATILE ORGANIC COMPOUND EMISSIONS, Section 1.0 – "General Provisions"
- 1142 - SPECIFIC EMISSION CONTROL REQUIREMENTS, Section 1.0 – "Control of NOx Emissions from Industrial Boilers", Section 2 – "Control of NOx Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries"

These amendments are to satisfy the US EPA requirements related to air emissions during equipment start-ups and shutdown as required by EPA SIP Call (80 FR 33840). The effective date of these amendments is January 11, 2017.

I further certify that the hearing was held in accordance with the notice required by Subsection 51.102 of 40 CFR 51.

For Ali Mirzakhalili, P.E.
Director
Division of Air Quality

Delaware's good nature depends on you!

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HEARING OFFICER'S REPORT

TO: The Honorable David S. Small
Cabinet Secretary, Department of Natural Resources and Environmental Control

FROM: Lisa A. Vest
Public Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: **Proposed Amendments to the following existing Delaware Regulations: (1) 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; (2) 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; (3) 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; (4) 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*"; and correlating proposed Revisions to Delaware's SIP to address the Start-up, Shutdown, and Malfunction SIP Call**

DATE: November 21, 2016

I. BACKGROUND AND PROCEDURAL HISTORY:

A public hearing was held on Tuesday, October 25, 2016, at 6:00 p.m. at the Department of Natural Resources and Environmental Control ("DNREC", "Department"), State Street Commons, 100 W. Water Street, Dover, Delaware to receive comment on proposed regulatory amendments ("Amendments") to the following existing regulations: (1) 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; (2) 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; (3) 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; and (4) 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*". Additionally, correlating revisions to Delaware's State Implementation Plan ("SIP") are being proposed at this time as well. All of the aforementioned Amendments and SIP revisions are being proposed by the Department at this

time to address the Start-up, Shutdown, and Malfunction ("SSM") SIP Call of the United States Environmental Protection Agency ("USEPA", "EPA") of June 12, 2015 (see 80 FR 33840).

A SIP is a state plan that identifies how that state will attain and maintain air quality that conforms to each primary and secondary national ambient air quality standards ("NAAQS"). The SIP is a complex, fluid document containing regulations, source-specific requirements, and non-regulatory items such as plans and emission inventories. Delaware's initial SIP was approved by the EPA on May 31, 1972. Since that initial approval, the Delaware SIP has been revised numerous times to address air quality non-attainment and maintenance issues. This was done by updating plans and inventories, and by adding new and revised regulatory control requirements. Delaware's SIP is compiled in the code of Federal Regulations at 40 C.F.R. Part 52, Subpart I.

As a result of a petition to EPA by the Sierra Club, the EPA has identified thirty-six (36) states with inadequate SIPs as they relate to SSM activities. EPA has specifically identified seven (7) existing Delaware rules in the SIP Call. The seven Delaware regulations cited by EPA were 7 DE Admin. Code §§ 1104, 1105, 1108, 1109, 1114, 1124, and 1142. As a result, Delaware is proposing revisions to four of these regulations, as previously noted[1]. The SIP document details the aforementioned revisions Delaware proposes to make to the SIP, and demonstrates that these revisions comport with the EPA's interpretation of the Clean Air Act ("CAA"), and are consistent with the EPA's approach for attainment and maintenance of all NAAQS.

[1] It should be noted that, with regard to 7 DE Admin. Code §§1108, 1109, and 1114, while these three regulations are also part of the SIP Call, the Department is not proposing changes to the same at this time. 7 DE Admin. Code §§ 1109 and 1114 are being removed from the SIP at this time. Regarding 7 DE Admin. Code §1108, the Department had already removed the offending SSM language when that regulation was last revised in 2013. As such, the Department is formally addressing 7 DE Admin. Code §§1108, 1109, and 1114 in the SIP, but not proposing any amendments to those regulations as part of this present action.

It should be noted that the Department received comments prior to the public hearing of October 25, 2016 from both the Sierra Club and the EPA on the aforementioned proposed Amendments to 7 DE Admin. Code 1100 and the Delaware SIP to address EPA's June 12, 2015 SSM SIP Call (see 80 FR 33840). As noted within the Department's Technical Response Memorandum ("TRM") which will be described in greater detail herein, Delaware does not agree that its SIP is deficient. Despite this disagreement, the Department has proposed these Amendments to both its regulations and SIP as referenced above, to avoid the imposition of CAA sanctions.

The Department has the statutory basis and legal authority to act with regard to the proposed Amendments and SIP as referenced above, pursuant to 7 *Del.C.*, Chapter 60. The aforementioned proposed Amendments and SIP revisions were presented and thoroughly vetted by the Department at the public hearing on October 25, 2016. Members of the public attended that public hearing, however, no comment was received by the Department at that time, or at any subsequent time prior to the hearing record closing with regard to public comment on November 9, 2016. It should also be noted that all proper notification and noticing requirements concerning this matter were met by the Department. Proper notice of the hearing was provided as required by law.

II. SUMMARY OF THE PUBLIC HEARING RECORD:

The public hearing record consists of the following documents: (1) a verbatim transcript; (2) seven documents introduced by responsible Department staff at the public hearing held on October 25, 2016, and marked by this Hearing Officer accordingly as Department Exhibits 1-7; (3) letter from Cristina Fernandez, Division Director, Region III, EPA dated Oct. 18, 2016; (4) letter from Joshua Smith, Esq., of the Sierra Club (Oakland, CA), dated October 25, 2016; and

(5) Technical Response Memorandum ("TRM") from the Department's Division of Air Quality ("DAQ") in response to the comments received from both EPA and the Sierra Club, dated November 18, 2016.

As noted previously, the aforementioned proposed Amendments to 7 DE Admin. Code §1100 and the Delaware SIP were presented and thoroughly vetted by the Department at the public hearing on October 25, 2016. Members of the public attended said public hearing, however, no comment was received by the Department with regard to this proposed regulatory promulgation. Pursuant to Delaware law, the record remained open for fifteen (15) additional days subsequent to the date of the public hearing, for the purpose of receiving public comment regarding these proposed Amendments. The hearing record formally closed on November 9, 2016, with no additional comment having been received by the Department with regard to this matter (other than the comments from EPA and the Sierra Club which were received prior to the hearing, as referenced previously).

With regard to the proposed Amendments to 7 DE Admin. Code §§ 1104, 1105, 1108, 1109, 1114, 1124, and 1142, and the Delaware SIP, it should be noted again that Delaware does not agree that its SIP is deficient[2]. Despite this disagreement, Delaware has proposed said Amendments to both the aforementioned regulations and SIP to avoid the imposition of CAA sanctions. As set forth in its TRM, DAQ notes that Delaware has designed the proposed revisions to (1) remove the Director's discretion provisions from the SIP that EPA believes fail to comply with the CAA, (2) comport with EPA guidance and the regulatory structure the EPA has established in other actions, and (3) maintain the elements removed from the SIP as State-only requirements because Delaware believes the conditions are necessary to administer good air quality management policy. DAQ further indicates therein that, "...from an environmental

[2] See Footnote 1, p.2.

perspective, the proposed revisions do not reflect any changes because the proposal retains the disputed provisions as State-enforceable-only provisions". And finally, DAQ opines that, "[f]rom EPA's perspective, the removal of the offending provisions from the SIP should be considered as SIP strengthening, thus approvable and non-controversial".

The TRM from DAQ encompasses the full range of comments received from both EPA and the Sierra Club, as well as the expert opinion of the Department's Division of Air Quality, as contained in the formal hearing record generated in this matter. Each comment has been organized according to its source, followed by a thorough and rational discussion of the issue based upon the record. Additionally, DAQ offers its reasoning behind its responses to the concerns set forth in the comments received from both Sierra Club and EPA. After reviewing DAQ's TRM, it is my view that this Division has done a fine job of identifying the relevant issues and discussing them in a thorough and balanced manner, thereby accurately reflecting all of the information contained in this hearing record. Therefore, the Secretary may get an in-depth understanding of the record by reviewing DAQ's TRM, which is expressly incorporated into this report and attached hereto as Appendix "A". Additionally, attached hereto as Appendix "B" are copies of all proposed Amendments to 7 DE Admin. Code §§ 1104, 1105, 1124, and 1142, as well as the proposed revisions to the Delaware SIP. Again, all proper notification and noticing requirements concerning this proposed promulgation were met by the Department in this matter.

III. RECOMMENDED FINDINGS AND CONCLUSIONS:

Based on the record developed, I find and conclude that the Department has provided appropriate reasoning regarding the need for the proposed Amendments to the following existing Delaware regulations: (1) 7 DE Admin. Code 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; (2) 7 DE Admin. Code §1105, "*Particulate Emissions from*

Industrial Process Operations"; (3) 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; (4) 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", as well as the proposed revisions to the Delaware SIP. Accordingly, I recommend promulgation of the same in the customary manner provided by law.

Further, I recommend the Secretary adopt the following findings and conclusions:

1. The Department has the statutory basis and legal authority to act with regard to the proposed amendments to 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; and 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", as well as the proposed revisions to the Delaware SIP, pursuant to 7 *Del.C.*, Ch. 60;

2. The Department has jurisdiction under its statutory authority, pursuant to 7 *Del.C.*, Ch. 60, to issue an Order adopting these proposed regulatory amendments and SIP revisions as final;

3. The Department provided adequate public notice of the proposed regulatory amendments and SIP revisions, and all proceedings in a manner required by the law and regulations, provided the public with an adequate opportunity to comment on the proposed regulatory amendments and SIP revisions, including at the time of the public hearing held on October 25, 2016, and held the record open through close of business on November 9, 2016, consistent with 29 *Del.C.* §10118(a), in order to consider public comment on these proposed regulatory amendments before making any final decision;

4. Promulgation of the proposed regulatory amendments to 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*", 7 DE Admin. Code §1105,

"*Particulate Emissions from Industrial Process Operations*", 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*", and (4) 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", along with the proposed revisions to Delaware's SIP, will enable the Department to (1) remove the Director's discretion provisions from the SIP that EPA believes fail to comply with the CAA; (2) comport with EPA guidance and the regulatory structure the EPA has established in other actions; (3) maintain the elements removed from the SIP as State-only requirements because Delaware believes the conditions are necessary to administer good air quality management policy, as referenced above; and (4) avoid the imposition of CAA sanctions;

5. The Department has reviewed these proposed regulatory amendments in the light of the Regulatory Flexibility Act, consistent with 29 *Del.C.* Ch. 104 (version applicable to all regulations initially published on or after January 1, 2016), and has selected Exemption "B5" regarding same, as the proposed regulation Amendments are required by federal law. Moreover, the Department believes these proposed regulatory Amendments to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally;

6. The Department's proposed regulatory amendments, as well as the proposed revisions to the Delaware SIP, as set forth in Appendix "B" hereto, are adequately supported, are not arbitrary or capricious, and are consistent with the applicable laws and regulations. Consequently, they should be approved as final regulatory amendments, which shall go into effect ten days after their publication in the next available issue of the *Delaware Register of Regulations*; and

7. The Department shall submit the proposed regulatory amendments as final regulatory amendments to 7 DE Admin. Code §1104, "*Particulate Emissions from Fuel Burning Equipment*"; 7 DE Admin. Code §1105, "*Particulate Emissions from Industrial Process Operations*"; 7 DE Admin. Code §1124, "*Control of Volatile Organic Compound Emissions*"; and 7 DE Admin. Code §1142, "*Specific Emission Control Requirements*", as well as the proposed revisions to the Delaware SIP, to the *Delaware Register of Regulations* for publication in its next available issue, and provide such other notice as the law and regulation require and the Department determines is appropriate.

LISA A. VEST
Public Hearing Officer

\ahear\ SIP.1104.5.24.42 Amendments.2016

Attachments/Appendix:
Appendix A: TRM (11/18/16)
Appendix B: Proposed Reg. Amendments & SIP Revisions

APPENDIX "A"

1104 Particulate Emissions from Fuel Burning Equipment

~~11/11/2013~~ xx/xx/2016

1.0 General Provisions

1.1 The emission of particulate matter from fuel burning equipment shall be controlled to a limit that shall meet the ambient air quality requirements.

1.2 The provisions of this Regulation shall not apply where the heat input capacity of the equipment is less than 1,000,000 BTU per hour.

1.3 The provisions of this regulation shall not apply to equipment or operations whose emissions are controlled by 7 **DE Admin. Code** 1105 or 7 **DE Admin. Code** 1107 or 7 **DE Admin. Code** 1129.

1.4 For purposes of this Regulation, the heat input value shall be based upon the manufacturer's guaranteed maximum input or the Department's calculated input capacity.

1.5 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 **DE Admin. Code** 1102.

17 DE Reg. 536 (11/01/13)

~~02/01/1981~~ xx/xx/2016

2.0 Emission Limits

2.1 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum two-hour average, from any fuel burning equipment.

2.2 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum 30-day rolling average, from any fuel burning equipment.

12 DE Reg. 347 (09/01/08)

1105 Particulate Emissions from Industrial Process Operations

~~02/01/1981~~ xx/11/2016

1.0 General Provisions

1.1 The emission of particulate matter from industrial process equipment shall be controlled to a limit that shall meet the ambient air quality requirements.

1.2 The provisions of this Regulation shall not apply to indirect heat exchangers which shall be controlled by 7 **DE Admin. Code** 1104.

1.3 For all tables in this Regulation, unless otherwise indicated, the emission limitation for a process weight rate between any two consecutive process weight rates shall be determined by linear interpolation.

1.4 For all tables in this Regulation, unless otherwise indicated, the emission limitation for process weight rate above the maximum process weight rate or below the minimum process weight rate shall be determined by linear extrapolation.

1.5 For purposes of this Regulation, the allowable mass emission rate of particulate matter shall be determined for individual units of equipment.

1.6 For operations involving similar units which are manifolded to a common stack, control techniques shall be such that no unit is emitting particulate matter at a rate which is in excess of the mass emission rate allowed by this Regulation.

1.7 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 **DE Admin. Code** 1102.

~~02/01/1981~~ xx/11/2016

2.0 General Restrictions

2.1 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot.

2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30-day rolling average basis.

(Break in Continuity of Sections)

~~02/01/1981~~xx/11/2016

4.0 Restrictions on Secondary Metal Operations

4.1 No person shall cause or allow particulate emissions from secondary metal operations into the atmosphere in excess of the quantity as listed in Table 4-1 of this regulation.

Table 4-1
Allowable Mass Emission Rate From Secondary Metal Operations

Process Weight Rate (Pounds per Hour)	Stack Emission Rate (Pounds per Hour)
1,000	0.75
2,000	1.50
3,000	2.25
4,000	3.00
5,000	3.75
6,000	4.50
7,000	5.25
8,000	6.00
9,000	6.75
10,000	7.50
12,000	9.00
16,000	12.00
18,000	13.50
20,000	15.00
30,000	22.50
40,000	30.00
50,000	37.50

4.2 The provisions of subsection 4.1 of this regulation shall not apply to electric arc furnaces, and their associated dust-handling equipment, with a capacity of more than 100 tons.

~~02/01/1981~~ xx/11/2016

5.0 Restrictions on Petroleum Refining Operations

5.1 No person shall cause or allow particulate emissions from catalytic cracking operations into the atmosphere in excess of the quantities as indicated in Table 5-1 of this regulation.

(Break in Continuity of Sections)

12 DE Reg. 347 (09/01/08)

Proposed rule 8/28/2016

1124 Control of Volatile Organic Compound Emissions

1.0 General Provisions

~~01/11/1993~~ xx/11/2016

(Break in Continuity of Sections)

~~1.4 The provisions of this regulation shall not apply to the startup and shutdown of equipment which operates continuously or in an extended steady-state when emissions from such equipment during startup and shutdown are governed by an Operating Permit issued pursuant to the provisions of 2.0 of 7 DE Admin. Code 1102.~~

1.4 Reserved

(Break in Continuity of Sections)

12 DE Reg. 347 (09/01/08)

1142 Specific Emission Control Requirements

~~12/12/2001~~ xx/11/2016

1.0 Control of NO_x Emissions from Industrial Boilers

1.1 Purpose

New Castle County and Kent County are part of the Philadelphia-Wilmington-Trenton 1-hour ozone non-attainment area. All areas of Delaware impact this non-attainment area. On December 19, 1999, the EPA identified an emission reduction "shortfall" associated with this non-attainment area. Promulgation of Section 1.0 of this regulation is one measure that the Department is taking to mitigate this shortfall.

In determining the applicability of Section1.0 of this regulation, the Department attempted to minimize the impact on facilities that recently installed NO_x controls under 7 **DE Admin. Code** 1112 (NO_x RACT) and 7 **DE Admin. Code** 1137/1139 (NO_x Budget Trading Program). The Department did this by regulating only large sources that, as of the effective date of Section 1.0 of this regulation, emitted NO_X at a rate greater than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112, were not equipped with NO_x emission control technology, and were not subject to the requirements of 7 **DE Admin. Code** 1139. In effect, Section 1.0 of this regulation regulates sources that remain high NO_x emitters after the application of RACT and post RACT requirements, and that have not committed substantial capital funds to reduce NO_x emissions.

1.2 Applicability

1.2.1 The provisions of Section1.0 of this regulation apply to any person that owns or operates any combustion unit with a maximum heat input capacity of equal to or greater than 100 million btu per hour, except that Section1.0 of this regulation shall not apply to any unit that, as of the effective date of Section 1.0 of this regulation:

1.2.1.1 Emits NO_x at a rate equal to or less than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112.

1.2.1.2 Is equipped with low NO_x burner, flue gas recirculation, selective catalytic reduction, or selective non-catalytic reduction technology

1.2.1.3 Is subject to the requirements of 7 **DE Admin. Code** 1139.

1.2.2 The requirements of Section1.0 of this regulation are in addition to all other state and federal requirements.

1.2.3 Affected persons shall comply with the requirements of Section 1.3 of this regulation as soon as practicable, but no later than May 1, 2004.

1.3 Standards.

1.3.1 The NO_x emission rate from any unit subject to Section 1.0 of this regulation shall be equal to or less than the following:

1.3.1.1 Between May 1st through September 30th of each year, inclusive: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.2 During all times that gaseous fuel is being fired: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.3 During all times not covered by 1.3.1.1 and 1.3.1.2 of this regulation: 0.25 lb/mmBTU, 24-hour calendar day average.

1.3.2 As an alternative to compliance with the requirements of subsection 1.3.1 of this regulation, compliance may be achieved through the procurement and retirement of NO_x allowances authorized for use under 7 **DE Admin. Code** 1139, as follows:

1.3.2.1 The actual 24-hour calendar day average NO_x emission rate in pounds per million btu shall be determined for each day of unit operation, using CEMs operated in accordance with subsection 1.4 of this regulation.

1.3.2.2 The actual heat input to each unit in million btu shall be determined for each day of unit operation, using methods proposed by the person subject to Section 1.0 of this regulation and acceptable to the Department.

1.3.2.3 0.10 or 0.25, as applicable and consistent with subsection 1.3.1 of this regulation, shall be subtracted from the rate determined in subsection 1.3.2.1 of this regulation.

1.3.2.4 To obtain the number of pounds of NO_x emitted for a particular day, the emission rate determined in subsection 1.3.2.3 of this regulation shall be multiplied by the heat input to the unit for that day determined in subsection 1.3.2.2 of this regulation. If the emission rate determined in subsection 1.3.2.3 of this regulation is equal to or less than zero, then the number of pounds of NO_x emitted for that day shall be zero.

1.3.2.5 Not later than the 20th day of each month:

1.3.2.5.1 The number of pounds of NO_x emissions calculated pursuant to subsection 1.3.2.4 of this regulation shall be summed for each calendar month, the result shall be divided by 2000, and shall be rounded to the nearest whole ton.

1.3.2.5.2 For each ton of NO_x emissions calculated pursuant to subsection 1.3.2.5.1 of this regulation, records shall be maintained demonstrating that one NO_x allowance owned by the person subject to Section 1.0 of this regulation is identified and available, by serial number, for retirement.

1.3.2.6 Not later than February 1 of each calendar year, the NO_x allowances identified pursuant to subsection 1.3.2.5.2 of this regulation for the previous calendar year, shall be submitted to the Department for retirement. Such submission shall detail the calculations specified in subsection 1.3.2.1 through subsection 1.3.2.5 of this regulation, and shall indicate the serial number of each allowance to be retired.

1.4 Monitoring Requirements. Compliance with the NO_x emission standards specified in Section 1.0 of this regulation shall be determined based on CEM data collected in accordance with the requirements of subsection 3.1.2 of 7 **DE Admin. Code** 1117 (Performance Specification 2), and in compliance with the requirements of 40 CFR, Part 60, Appendix F.

1.5 Recordkeeping and Reporting Requirements.

1.5.1 Not later than 180 days after the effective date of Section 1.0 of this regulation, any person subject to Section 1.0 of this regulation shall develop, and submit to the Department for approval, a schedule for bringing the affected emission unit or units into compliance with the requirements of Section 1.0 of this regulation. Such schedule shall include, at a minimum, all of the following:

1.5.1.1 The method by which compliance will be achieved

1.5.1.2 The dates by which the affected person commits to completing the following major increments of progress, as applicable:

1.5.1.2.1 Completion of engineering;

1.5.1.2.2 Submission of permit applications;

1.5.1.2.3 Awarding of contracts for construction or installation;

1.5.1.2.4 Initiation of construction;

1.5.1.2.5 Completion of construction;

1.5.1.2.6 Commencement of trial operation;

1.5.1.2.7 Initial compliance testing;

1.5.1.2.8 Submission of compliance testing reports;

1.5.1.2.9 Commencement of normal operations (in full compliance).

1.5.2 Any person subject to Section 1.0 of this regulation shall submit to the Department an initial compliance certification not later than May 1, 2004. The initial compliance certification shall, at a minimum, include the following information:

1.5.2.1 The name and the location of the facility.

1.5.2.2 The address and telephone number of the person responsible for the facility.

1.5.2.3 Identification of the subject source or sources.

1.5.2.4 The applicable standard.

1.5.2.5 The method of compliance.

1.5.2.6 Certification that each subject source is in compliance with the applicable standard.

1.5.2.7 All records necessary for determining compliance with the standards of Section 1.0 of this regulation shall be maintained at the facility for a period of five years.

1.5.3 Any person subject to Section 1.0 of this regulation shall, for each occurrence of excess emissions, within 30 calendar days of becoming aware of such occurrence, supply the Department with the following information:

1.5.3.1 The name and location of the facility.

1.5.3.2 The subject source or sources that caused the excess emissions.

1.5.3.3 The time and date of first observation of the excess emissions.

1.5.3.4 The cause and expected duration of the excess emissions.

1.5.3.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions.

1.5.3.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions

1.5.4 Any person subject to Section 1.0 of this regulation shall maintain all information necessary to demonstrate compliance with the requirements of Section 1.0 of this regulation for a minimum period of five years. Such information shall be immediately made available to the Department upon verbal and written request.

~~04/11/2011~~ xx/11/2016

2.0 Control of NO_x Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries

2.1 Purpose

2.1.1 The purpose of Section 2.0 of this regulation is to reduce NOX emissions from Delaware's large industrial boilers and process heaters that are located at petroleum refineries.

2.1.2 Under the 8-hour ozone national ambient air quality standard (NAAQS), the state of Delaware is part of the Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ moderate non-attainment area (NAA). The entire NAA, including Delaware, is required by the Clean Air Act (CAA) to attain the 8-hour ozone NAAQS by 2010. After attainment, the area must maintain compliance with the NAAQS. By implementing Section 2.0 of this regulation, NOx emission reductions from the affected boilers and heaters shall contribute to (1) attainment and maintenance of the 8-hour ozone standard, and (2) improvement of the ambient air quality, in both Delaware and the entire NAA.

2.1.3 Additionally, New Castle County of Delaware is a part of the Philadelphia-Wilmington-Camden, PA-DE-NJ NAA for the annual fine particulate matter ($PM_{2.5}$) NAAQS, and is required by the CAA to attain the NAAQS by 2010. Since NOx is a significant precursor to $PM_{2.5}$ formation, reducing NOx emissions will also assist in attainment and maintenance of the $PM_{2.5}$ standard.

2.2 Applicability and Compliance Dates

2.2.1 Section 2.0 of this regulation applies to any industrial boiler or process heater with a maximum heat input capacity of equal to or greater than 200 million BTUs per hour (mmBTU/Hour), which is operated or permitted to operate within a petroleum refinery facility on July 11, 2007. This comprises the following ten (10) units at the Delaware City refinery:

2.2.1.1 Crude Unit Vacuum Heater (Unit 21-H-2);

2.2.1.2 Crude Unit Atmospheric Heater (Unit 21-H-701);

2.2.1.3 Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3);

2.2.1.4 Steam Methane Reformer Heater (Unit 37-H-1);

2.2.1.5 Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1,2,3);

2.2.1.6 Boiler 1 (Unit 80-1);

2.2.1.7 Boiler 2 (Unit 80-2);

2.2.1.8 Boiler 3 (Unit 80-3);

2.2.1.9 Boiler 4 (Unit 80-4).

2.2.1.10 Fluid Catalytic Cracking Unit Carbon Monoxide (CO) boiler (Unit 23-H-3).

2.2.2 The requirements of Section 2.0 of this regulation are in addition to all other state and federal requirements.

2.2.3 The following units shall be in compliance with the requirements of Section 2.0 of this regulation on and after July 11, 2007: Crude Unit Atmospheric Heater (Unit 21-H-701), Steam Methane Reformer Heater (Unit 37-H-1) and Boiler 2 (Unit 80-2).

2.2.4 The following units shall be in compliance with the requirements of Section 2.0 of this regulation as soon as practicable, but not later than:

2.2.4.1 December 31, 2008: Boiler 1 (Unit 80-1) and Crude Unit vacuum Heater (Unit 21-H-2), and Fluid Catalytic Cracking Unit CO boiler (Unit 42-H-1, 2, 3).

2.2.4.2 May 1, 2011: Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4).

2.2.4.3 December 31, 2012: Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1, 2, 3).

2.3 Standards.

The owner or operator of any industrial boiler or process heater identified in subsection ~~Section~~ 2.2.1 of this regulation shall meet the applicable NO_x emission limitation identified in the following sections:

2.3.1 Except as provided for in subsection 2.3.2 of this regulation, the owner or operator of any industrial boiler or process heater identified in ~~Section~~ subsection 2.2.1 of this regulation shall not operate except in compliance with the applicable NO_x emission limitation identified in the following sections:

2.3.1.1 For the Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3), Reserved.

2.3.1.2 For the Steam Methane Reformer (SMR) Heater (Unit 37-H-1), Reserved.

2.3.1.3 For Boiler 1 (Unit 80-1), Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4), 0.015 lb/mmBTU, on a 24-hour rolling average basis.

2.3.1.4 For the Fluid Catalytic Cracking Unit CO boiler (Unit 23-H-3), 20 ppmvd @ 0 % O2 on a 365 day rolling average basis, and 40 ppmvd @ 0 % O2 on a 7-day rolling average basis.

2.3.1.5 For any unit not covered by subsections 2.3.1.1, 2.3.1.2, or 2.3.1.3, or 2.3.1.4 0.04 lb/mmBTU, on a 24-hour rolling average basis.

~~2.3.1.6 The standards set out in 2.3 of this regulation shall not apply to the start-up and shutdown of equipment when emissions from such equipment during a start-up and shutdown are addressed in an operation permit issued pursuant to the provisions of 7 **DE Admin.** Code 1102.~~

2.3.2 As an alternative to complying with one or more of the unit specific emission limitations specified in subsection 2.3.1 of this regulation the owner or operator of any industrial boiler or process heater identified in ~~Section~~ subsection 2.2.1 of this regulation shall limit the NO_x emissions, from all NO_x emission sources at the facility, to equal to or less than the applicable emission cap specified in subsection 2.3.2.1 ~~though~~ through subsection 2.3.2.3 of this regulation.

2.3.2.1 2,525 tons per year, evaluated over each twelve (12) consecutive month rolling period, for each twelve (12) month rolling period commencing with the rolling twelve (12) consecutive month period comprised by calendar year (CY) 2011 and ending with the twelve (12) consecutive month rolling period that ends on December 31, 2013.

2.3.2.2 2,225 tons per year, evaluated over each twelve (12) consecutive month rolling period, comprising calendar year 2014.

2.3.2.3 1,650 tons per year, evaluated over each twelve (12) consecutive month rolling period, commencing with the twelve (12) month rolling period beginning on January 1, 2015 and ending on December 31, 2015, and continuing thereafter.

2.3.3 Neither the provisions of ~~Section~~ subsection 2.3.2, nor this regulation more generally, shall limit in any way the Department's authority to establish a lower NO_x emission cap and more stringent NOx emission limitations for any source subject to this regulation.

2.3 Compliance Requirements.

2.4.1 Compliance with the NO_x emission standards specified in subsection 2.3.1 of this regulation shall be determined based on CEM data collected in accordance with the appropriate requirements set forth in 40 CFR, Part 60, Appendix B, Performance Specification 2, and the QA/QC requirements in 40 CFR Part 60, Appendix F.

2.4.2 Compliance with the facility-wide NO_x emission cap specified in subsection 2.3.2 of this regulation shall be determined not later than the last day of each month, as follows.

2.4.2.1 The mass of NO_x (tons) emitted during the prior month from each emission source at the facility subject to the NO_x cap shall be accurately determined using the methods specified in subsection 2.4.2.1.1 through subsection 2.4.2.1.3 of this regulation, as approved by the Department.

2.4.2.1.1 Continuous emission monitoring systems (CEMS) that meet the requirements of subsection 2.4.1 of this regulation.

2.4.2.1.2 A NO_x emission factor that is based upon the results of the most recent performance testing conducted in accordance with a protocol approved by the Department.

2.4.2.1.3 Published NO_x emission factors for such source or category of sources, or any other method approvable by the Department.

2.4.2.2 NO_x emissions from each NO_x emission source at the facility shall be determined for all periods of startup, shutdown or malfunction. To the extent that such emissions are not measured by CEMS during such periods of startup, shutdown or malfunction, and to the further extent that performance testing for such source did not establish emission factors for such equipment reflective of operations during periods of startup, shutdown or malfunction, then the owner or operator shall estimate such emission rates from such source during any periods of startup, shutdown or malfunction in accordance with best engineering judgment.

2.4.2.3 The emissions calculated in subsection 2.4.2.1 and subsection 2.4.2.2 of this regulation shall be summed and aggregated with the calculation results for the preceding months as provided for in subsection 2.4.2.3.1 through subsection 2.4.2.3.4 below.

2.4.2.3.1 For any month before January 2014, the preceding eleven (11) consecutive months shall be included. No emissions occurring before January 1, 2011 shall be included.

2.4.2.3.2 For any month in calendar year 2014, only months in calendar year 2014 shall be included.

2.4.2.3.3 For any month in calendar year 2015, only months in calendar year 2015 shall be included.

2.4.2.3.4 For any month after December 31, 2015, the preceding eleven (11) consecutive months shall be included.

2.4.2.4 Compliance shall be determined by comparing the results of the calculations in subsection 2.4.2.3 of this regulation with the appropriate NO_x emission cap specified in subsection 2.3.2 of this regulation. Following aggregation and summation of emission in accordance with subsection 2.4.2.3, fractions of tons shall be rounded up to the next higher number.

2.4 Recordkeeping and Reporting Requirements

2.5.1 Not later than October 7, 2011, any person subject to Section 2.0 of this regulation shall develop, and submit to the Department, a schedule for bringing the facility into compliance with the requirements of ~~Section~~ subsection 2.3 of this regulation. Such schedule shall include, at a minimum, all of the following:

2.5.1.1 The method by which compliance will be achieved.

2.5.1.2 For persons subject to the requirements of subsection 2.3.1 of this regulation, the dates by which the affected person plans to complete the following major increments of progress, as applicable:

2.5.1.2.1 Completion of engineering;

2.5.1.2.2 Submission of permit applications;

2.5.1.2.3 Awarding of contracts for construction and/or installation;

2.5.1.2.4 Initiation of construction;

2.5.1.2.5 Completion of construction;

2.5.1.2.6 Commencement of trial operation;

2.5.1.2.7 Initial compliance testing;

2.5.1.2.8 Submission of compliance testing reports;

2.5.1.2.9 Commencement of normal operations (in full compliance).

2.5.2 For persons subject to the requirements of subsection 2.3.2 of this regulation, the owner or operator shall submit to the Department an initial notice that contains all of the information specified in subsection 2.5.2.1 and subsection 2.5.2.2 of this regulation.

2.5.2.1 The date that compliance with this regulation will begin pursuant to subsection 2.3.2 of this regulation. A permit application submitted pursuant to 7 **DE Admin. Code** 1102 or 1130 that contains this information may be used as a means to satisfy this requirement.

2.5.2.2 A list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.3 Any person subject to the requirements of subsection 2.3.1 of this regulation shall submit to the Department an initial compliance certification by the later of the following dates, or the date the unit first operates after the following date subject to the requirements of subsection 2.3.1: September 10, 2007 for units identified in ~~Section~~ subsection 2.2.3 of this regulation and, for units identified in ~~Section~~ subsection 2.2.4, by the compliance date specified in ~~Section~~ subsection 2.2.4. The initial compliance certification shall include, at a minimum, all of the following information:

2.5.3.1 The name and the location of the facility;

2.5.3.2 The name, address and telephone number of the person responsible for the facility;

2.5.3.3 Identification of the subject source(s);

2.5.3.4 The applicable standard;

2.5.3.5 The method of compliance;

2.5.3.6 Certification that each subject source is in compliance with the applicable standard.

2.5.4 Any person subject to the requirements of subsection 2.3.2 of this regulation shall submit to the Department a semi-annual report by January 31 and July 31 of each calendar year that contains all of the information specified in subsection 2.5.4.1 through subsection 2.5.4.5 of this regulation. At the request of the owner or operator, the Department may change the frequency of such reporting requirements, as may be necessary to harmonize them with reporting requirements of 7 **DE Admin. Code** 1130, Title V Operating Permits Program.

2.5.4.1 The identification of owner and operator of the facility.

2.5.4.2 A report of the monthly NOx emissions for each source, the basis for determination of the emissions pursuant to subsection 2.4.2.1, and comparison of the rolling total NOx emissions from the facility with the appropriate NOx emission cap that was made pursuant to subsection 2.4.2.4 of this regulation, for each month in the reporting period.

2.5.4.3 An updated list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.5 Any person subject to Section 2.0 of this regulation shall, for each occurrence of excess emissions above the standards of ~~Section~~ subsection 2.3 of this regulation, including periods when monitoring data was not collected in accordance with procedures approved pursuant to subsection 2.4.2.1 of this regulation, within thirty (30) calendar days of becoming aware of such occurrence, supply the Department with the following information:

2.5.5.1 The name and location of the facility;

2.5.5.2 The subject source(s) that caused the excess emissions;

2.5.5.3 The time and date of first observation of the excess emissions;

2.5.5.4 The cause and expected duration of the excess emissions;

2.5.5.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions;

2.5.5.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

2.5.6 Any person subject to Section 2.0 of this regulation shall maintain all information necessary to determine and demonstrate compliance with the requirements of this section for a minimum period of five (5) years. Such information shall be immediately made available to the Department upon verbal and written request.

5 DE Reg. 1299 (12/01/01)
11 DE Reg. 75 (07/01/07)
12 DE Reg. 347 (09/01/08)
13 DE Reg. 670 (11/01/09)
14 DE Reg. 1092 (04/01/11)

1142 Specific Emission Control Requirements

~~12/12/2001~~ xx/11/2016

1.0 Control of NO_x Emissions from Industrial Boilers

1.1 Purpose

New Castle County and Kent County are part of the Philadelphia-Wilmington-Trenton 1-hour ozone non-attainment area. All areas of Delaware impact this non-attainment area. On December 19, 1999, the EPA identified an emission reduction "shortfall" associated with this non-attainment area. Promulgation of Section 1.0 of this regulation is one measure that the Department is taking to mitigate this shortfall.

In determining the applicability of Section1.0 of this regulation, the Department attempted to minimize the impact on facilities that recently installed NO_x controls under 7 **DE Admin. Code** 1112 (NO_x RACT) and 7 **DE Admin. Code** 1137/1139 (NO_x Budget Trading Program). The Department did this by regulating only large sources that, as of the effective date of Section 1.0 of this regulation, emitted NO_X at a rate greater than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112, were not equipped with NO_x emission control technology, and were not subject to the requirements of 7 **DE Admin. Code** 1139. In effect, Section 1.0 of this regulation regulates sources that remain high NO_x emitters after the application of RACT and post RACT requirements, and that have not committed substantial capital funds to reduce NO_x emissions.

1.2 Applicability

1.2.1 The provisions of Section1.0 of this regulation apply to any person that owns or operates any combustion unit with a maximum heat input capacity of equal to or greater than 100 million btu per hour, except that Section1.0 of this regulation shall not apply to any unit that, as of the effective date of Section 1.0 of this regulation:

1.2.1.1 Emits NO_x at a rate equal to or less than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112.

1.2.1.2 Is equipped with low NO_x burner, flue gas recirculation, selective catalytic reduction, or selective non-catalytic reduction technology

1.2.1.3 Is subject to the requirements of 7 **DE Admin. Code** 1139.

1.2.2 The requirements of Section1.0 of this regulation are in addition to all other state and federal requirements.

1.2.3 Affected persons shall comply with the requirements of Section 1.3 of this regulation as soon as practicable, but no later than May 1, 2004.

1.3 Standards.

1.3.1 The NO_x emission rate from any unit subject to Section 1.0 of this regulation shall be equal to or less than the following:

1.3.1.1 Between May 1st through September 30th of each year, inclusive: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.2 During all times that gaseous fuel is being fired: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.3 During all times not covered by 1.3.1.1 and 1.3.1.2 of this regulation: 0.25 lb/mmBTU, 24-hour calendar day average.

1.3.2 As an alternative to compliance with the requirements of subsection 1.3.1 of this regulation, compliance may be achieved through the procurement and retirement of NO_x allowances authorized for use under 7 **DE Admin. Code** 1139, as follows:

1.3.2.1 The actual 24-hour calendar day average NO_x emission rate in pounds per million btu shall be determined for each day of unit operation, using CEMs operated in accordance with subsection 1.4 of this regulation.

1.3.2.2 The actual heat input to each unit in million btu shall be determined for each day of unit operation, using methods proposed by the person subject to Section 1.0 of this regulation and acceptable to the Department.

1.3.2.3 0.10 or 0.25, as applicable and consistent with subsection 1.3.1 of this regulation, shall be subtracted from the rate determined in subsection 1.3.2.1 of this regulation.

1.3.2.4 To obtain the number of pounds of NO_x emitted for a particular day, the emission rate determined in subsection 1.3.2.3 of this regulation shall be multiplied by the heat input to the unit for that day determined in subsection 1.3.2.2 of this regulation. If the emission rate determined in subsection 1.3.2.3 of this regulation is equal to or less than zero, then the number of pounds of NO_x emitted for that day shall be zero.

1.3.2.5 Not later than the 20th day of each month:

1.3.2.5.1 The number of pounds of NO_x emissions calculated pursuant to subsection 1.3.2.4 of this regulation shall be summed for each calendar month, the result shall be divided by 2000, and shall be rounded to the nearest whole ton.

1.3.2.5.2 For each ton of NO_x emissions calculated pursuant to subsection 1.3.2.5.1 of this regulation, records shall be maintained demonstrating that one NO_x allowance owned by the person subject to Section 1.0 of this regulation is identified and available, by serial number, for retirement.

1.3.2.6 Not later than February 1 of each calendar year, the NO_x allowances identified pursuant to subsection 1.3.2.5.2 of this regulation for the previous calendar year, shall be submitted to the Department for retirement. Such submission shall detail the calculations specified in subsection 1.3.2.1 through subsection 1.3.2.5 of this regulation, and shall indicate the serial number of each allowance to be retired.

1.4 Monitoring Requirements. Compliance with the NO_x emission standards specified in Section 1.0 of this regulation shall be determined based on CEM data collected in accordance with the requirements of subsection 3.1.2 of 7 **DE Admin. Code** 1117 (Performance Specification 2), and in compliance with the requirements of 40 CFR, Part 60, Appendix F.

1.5 Recordkeeping and Reporting Requirements.

1.5.1 Not later than 180 days after the effective date of Section 1.0 of this regulation, any person subject to Section 1.0 of this regulation shall develop, and submit to the Department for approval, a schedule for bringing the affected emission unit or units into compliance with the requirements of Section 1.0 of this regulation. Such schedule shall include, at a minimum, all of the following:

1.5.1.1 The method by which compliance will be achieved

1.5.1.2 The dates by which the affected person commits to completing the following major increments of progress, as applicable:

1.5.1.2.1 Completion of engineering;

1.5.1.2.2 Submission of permit applications;

1.5.1.2.3 Awarding of contracts for construction or installation;

1.5.1.2.4 Initiation of construction;

1.5.1.2.5 Completion of construction;

1.5.1.2.6 Commencement of trial operation;

1.5.1.2.7 Initial compliance testing;

1.5.1.2.8 Submission of compliance testing reports;

1.5.1.2.9 Commencement of normal operations (in full compliance).

1.5.2 Any person subject to Section 1.0 of this regulation shall submit to the Department an initial compliance certification not later than May 1, 2004. The initial compliance certification shall, at a minimum, include the following information:

1.5.2.1 The name and the location of the facility.

1.5.2.2 The address and telephone number of the person responsible for the facility.

1.5.2.3 Identification of the subject source or sources.

1.5.2.4 The applicable standard.

1.5.2.5 The method of compliance.

1.5.2.6 Certification that each subject source is in compliance with the applicable standard.

1.5.2.7 All records necessary for determining compliance with the standards of Section 1.0 of this regulation shall be maintained at the facility for a period of five years.

1.5.3 Any person subject to Section 1.0 of this regulation shall, for each occurrence of excess emissions, within 30 calendar days of becoming aware of such occurrence, supply the Department with the following information:

1.5.3.1 The name and location of the facility.

1.5.3.2 The subject source or sources that caused the excess emissions.

1.5.3.3 The time and date of first observation of the excess emissions.

1.5.3.4 The cause and expected duration of the excess emissions.

1.5.3.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions.

1.5.3.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions

1.5.4 Any person subject to Section 1.0 of this regulation shall maintain all information necessary to demonstrate compliance with the requirements of Section 1.0 of this regulation for a minimum period of five years. Such information shall be immediately made available to the Department upon verbal and written request.

~~04/11/2011~~ xx/11/2016

2.0 Control of NO_x Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries

2.1 Purpose

2.1.1 The purpose of Section 2.0 of this regulation is to reduce NOX emissions from Delaware's large industrial boilers and process heaters that are located at petroleum refineries.

2.1.2 Under the 8-hour ozone national ambient air quality standard (NAAQS), the state of Delaware is part of the Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ moderate non-attainment area (NAA). The entire NAA, including Delaware, is required by the Clean Air Act (CAA) to attain the 8-hour ozone NAAQS by 2010. After attainment, the area must maintain compliance with the NAAQS. By implementing Section 2.0 of this regulation, NOx emission reductions from the affected boilers and heaters shall contribute to (1) attainment and maintenance of the 8-hour ozone standard, and (2) improvement of the ambient air quality, in both Delaware and the entire NAA.

2.1.3 Additionally, New Castle County of Delaware is a part of the Philadelphia-Wilmington-Camden, PA-DE-NJ NAA for the annual fine particulate matter ($PM_{2.5}$) NAAQS, and is required by the CAA to attain the NAAQS by 2010. Since NOx is a significant precursor to $PM_{2.5}$ formation, reducing NOx emissions will also assist in attainment and maintenance of the $PM_{2.5}$ standard.

2.2 Applicability and Compliance Dates

2.2.1 Section 2.0 of this regulation applies to any industrial boiler or process heater with a maximum heat input capacity of equal to or greater than 200 million BTUs per hour (mmBTU/Hour), which is operated or permitted to operate within a petroleum refinery facility on July 11, 2007. This comprises the following ten (10) units at the Delaware City refinery:

2.2.1.1 Crude Unit Vacuum Heater (Unit 21-H-2);

2.2.1.2 Crude Unit Atmospheric Heater (Unit 21-H-701);

2.2.1.3 Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3);

2.2.1.4 Steam Methane Reformer Heater (Unit 37-H-1);

2.2.1.5 Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1,2,3);

2.2.1.6 Boiler 1 (Unit 80-1);

2.2.1.7 Boiler 2 (Unit 80-2);

2.2.1.8 Boiler 3 (Unit 80-3);

2.2.1.9 Boiler 4 (Unit 80-4).

2.2.1.10 Fluid Catalytic Cracking Unit Carbon Monoxide (CO) boiler (Unit 23-H-3).

2.2.2 The requirements of Section 2.0 of this regulation are in addition to all other state and federal requirements.

2.2.3 The following units shall be in compliance with the requirements of Section 2.0 of this regulation on and after July 11, 2007: Crude Unit Atmospheric Heater (Unit 21-H-701), Steam Methane Reformer Heater (Unit 37-H-1) and Boiler 2 (Unit 80-2).

2.2.4 The following units shall be in compliance with the requirements of Section 2.0 of this regulation as soon as practicable, but not later than:

2.2.4.1 December 31, 2008: Boiler 1 (Unit 80-1) and Crude Unit vacuum Heater (Unit 21-H-2), and Fluid Catalytic Cracking Unit CO boiler (Unit 42-H-1, 2, 3).

2.2.4.2 May 1, 2011: Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4).

2.2.4.3 December 31, 2012: Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1, 2, 3).

2.3 Standards.

The owner or operator of any industrial boiler or process heater identified in subsection ~~Section~~ 2.2.1 of this regulation shall meet the applicable NO_x emission limitation identified in the following sections:

2.3.1 Except as provided for in subsection 2.3.2 of this regulation, the owner or operator of any industrial boiler or process heater identified in ~~Section~~ subsection 2.2.1 of this regulation shall not operate except in compliance with the applicable NO_x emission limitation identified in the following sections:

2.3.1.1 For the Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3), Reserved.

2.3.1.2 For the Steam Methane Reformer (SMR) Heater (Unit 37-H-1), Reserved.

2.3.1.3 For Boiler 1 (Unit 80-1), Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4), 0.015 lb/mmBTU, on a 24-hour rolling average basis.

2.3.1.4 For the Fluid Catalytic Cracking Unit CO boiler (Unit 23-H-3), 20 ppmvd @ 0 % O2 on a 365 day rolling average basis, and 40 ppmvd @ 0 % O2 on a 7-day rolling average basis.

2.3.1.5 For any unit not covered by subsections 2.3.1.1, 2.3.1.2, or 2.3.1.3, or 2.3.1.4 0.04 lb/mmBTU, on a 24-hour rolling average basis.

~~2.3.1.6 The standards set out in 2.3 of this regulation shall not apply to the start-up and shutdown of equipment when emissions from such equipment during a start-up and shutdown are addressed in an operation permit issued pursuant to the provisions of 7 **DE Admin.** Code 1102.~~

2.3.2 As an alternative to complying with one or more of the unit specific emission limitations specified in subsection 2.3.1 of this regulation the owner or operator of any industrial boiler or process heater identified in ~~Section~~ subsection 2.2.1 of this regulation shall limit the NO_x emissions, from all NO_x emission sources at the facility, to equal to or less than the applicable emission cap specified in subsection 2.3.2.1 ~~though~~ through subsection 2.3.2.3 of this regulation.

2.3.2.1 2,525 tons per year, evaluated over each twelve (12) consecutive month rolling period, for each twelve (12) month rolling period commencing with the rolling twelve (12) consecutive month period comprised by calendar year (CY) 2011 and ending with the twelve (12) consecutive month rolling period that ends on December 31, 2013.

2.3.2.2 2,225 tons per year, evaluated over each twelve (12) consecutive month rolling period, comprising calendar year 2014.

2.3.2.3 1,650 tons per year, evaluated over each twelve (12) consecutive month rolling period, commencing with the twelve (12) month rolling period beginning on January 1, 2015 and ending on December 31, 2015, and continuing thereafter.

2.3.3 Neither the provisions of ~~Section~~ subsection 2.3.2, nor this regulation more generally, shall limit in any way the Department's authority to establish a lower NO_x emission cap and more stringent NOx emission limitations for any source subject to this regulation.

2.3 Compliance Requirements.

2.4.1 Compliance with the NO_x emission standards specified in subsection 2.3.1 of this regulation shall be determined based on CEM data collected in accordance with the appropriate requirements set forth in 40 CFR, Part 60, Appendix B, Performance Specification 2, and the QA/QC requirements in 40 CFR Part 60, Appendix F.

2.4.2 Compliance with the facility-wide NO_x emission cap specified in subsection 2.3.2 of this regulation shall be determined not later than the last day of each month, as follows.

2.4.2.1 The mass of NO_x (tons) emitted during the prior month from each emission source at the facility subject to the NO_x cap shall be accurately determined using the methods specified in subsection 2.4.2.1.1 through subsection 2.4.2.1.3 of this regulation, as approved by the Department.

2.4.2.1.1 Continuous emission monitoring systems (CEMS) that meet the requirements of subsection 2.4.1 of this regulation.

2.4.2.1.2 A NO_x emission factor that is based upon the results of the most recent performance testing conducted in accordance with a protocol approved by the Department.

2.4.2.1.3 Published NO_x emission factors for such source or category of sources, or any other method approvable by the Department.

2.4.2.2 NO_x emissions from each NO_x emission source at the facility shall be determined for all periods of startup, shutdown or malfunction. To the extent that such emissions are not measured by CEMS during such periods of startup, shutdown or malfunction, and to the further extent that performance testing for such source did not establish emission factors for such equipment reflective of operations during periods of startup, shutdown or malfunction, then the owner or operator shall estimate such emission rates from such source during any periods of startup, shutdown or malfunction in accordance with best engineering judgment.

2.4.2.3 The emissions calculated in subsection 2.4.2.1 and subsection 2.4.2.2 of this regulation shall be summed and aggregated with the calculation results for the preceding months as provided for in subsection 2.4.2.3.1 through subsection 2.4.2.3.4 below.

2.4.2.3.1 For any month before January 2014, the preceding eleven (11) consecutive months shall be included. No emissions occurring before January 1, 2011 shall be included.

2.4.2.3.2 For any month in calendar year 2014, only months in calendar year 2014 shall be included.

2.4.2.3.3 For any month in calendar year 2015, only months in calendar year 2015 shall be included.

2.4.2.3.4 For any month after December 31, 2015, the preceding eleven (11) consecutive months shall be included.

2.4.2.4 Compliance shall be determined by comparing the results of the calculations in subsection 2.4.2.3 of this regulation with the appropriate NO_x emission cap specified in subsection 2.3.2 of this regulation. Following aggregation and summation of emission in accordance with subsection 2.4.2.3, fractions of tons shall be rounded up to the next higher number.

2.4 Recordkeeping and Reporting Requirements

2.5.1 Not later than October 7, 2011, any person subject to Section 2.0 of this regulation shall develop, and submit to the Department, a schedule for bringing the facility into compliance with the requirements of ~~Section~~ subsection 2.3 of this regulation. Such schedule shall include, at a minimum, all of the following:

2.5.1.1 The method by which compliance will be achieved.

2.5.1.2 For persons subject to the requirements of subsection 2.3.1 of this regulation, the dates by which the affected person plans to complete the following major increments of progress, as applicable:

2.5.1.2.1 Completion of engineering;

2.5.1.2.2 Submission of permit applications;

2.5.1.2.3 Awarding of contracts for construction and/or installation;

2.5.1.2.4 Initiation of construction;

2.5.1.2.5 Completion of construction;

2.5.1.2.6 Commencement of trial operation;

2.5.1.2.7 Initial compliance testing;

2.5.1.2.8 Submission of compliance testing reports;

2.5.1.2.9 Commencement of normal operations (in full compliance).

2.5.2 For persons subject to the requirements of subsection 2.3.2 of this regulation, the owner or operator shall submit to the Department an initial notice that contains all of the information specified in subsection 2.5.2.1 and subsection 2.5.2.2 of this regulation.

2.5.2.1 The date that compliance with this regulation will begin pursuant to subsection 2.3.2 of this regulation. A permit application submitted pursuant to 7 **DE Admin. Code** 1102 or 1130 that contains this information may be used as a means to satisfy this requirement.

2.5.2.2 A list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.3 Any person subject to the requirements of subsection 2.3.1 of this regulation shall submit to the Department an initial compliance certification by the later of the following dates, or the date the unit first operates after the following date subject to the requirements of subsection 2.3.1: September 10, 2007 for units identified in ~~Section~~ subsection 2.2.3 of this regulation and, for units identified in ~~Section~~ subsection 2.2.4, by the compliance date specified in ~~Section~~ subsection 2.2.4. The initial compliance certification shall include, at a minimum, all of the following information:

2.5.3.1 The name and the location of the facility;

2.5.3.2 The name, address and telephone number of the person responsible for the facility;

2.5.3.3 Identification of the subject source(s);

2.5.3.4 The applicable standard;

2.5.3.5 The method of compliance;

2.5.3.6 Certification that each subject source is in compliance with the applicable standard.

2.5.4 Any person subject to the requirements of subsection 2.3.2 of this regulation shall submit to the Department a semi-annual report by January 31 and July 31 of each calendar year that contains all of the information specified in subsection 2.5.4.1 through subsection 2.5.4.5 of this regulation. At the request of the owner or operator, the Department may change the frequency of such reporting requirements, as may be necessary to harmonize them with reporting requirements of 7 **DE Admin. Code** 1130, Title V Operating Permits Program.

2.5.4.1 The identification of owner and operator of the facility.

2.5.4.2 A report of the monthly NOx emissions for each source, the basis for determination of the emissions pursuant to subsection 2.4.2.1, and comparison of the rolling total NOx emissions from the facility with the appropriate NOx emission cap that was made pursuant to subsection 2.4.2.4 of this regulation, for each month in the reporting period.

2.5.4.3 An updated list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.5 Any person subject to Section 2.0 of this regulation shall, for each occurrence of excess emissions above the standards of ~~Section~~ subsection 2.3 of this regulation, including periods when monitoring data was not collected in accordance with procedures approved pursuant to subsection 2.4.2.1 of this regulation, within thirty (30) calendar days of becoming aware of such occurrence, supply the Department with the following information:

2.5.5.1 The name and location of the facility;

2.5.5.2 The subject source(s) that caused the excess emissions;

2.5.5.3 The time and date of first observation of the excess emissions;

2.5.5.4 The cause and expected duration of the excess emissions;

2.5.5.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions;

2.5.5.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

2.5.6 Any person subject to Section 2.0 of this regulation shall maintain all information necessary to determine and demonstrate compliance with the requirements of this section for a minimum period of five (5) years. Such information shall be immediately made available to the Department upon verbal and written request.

5 DE Reg. 1299 (12/01/01)
11 DE Reg. 75 (07/01/07)
12 DE Reg. 347 (09/01/08)
13 DE Reg. 670 (11/01/09)
14 DE Reg. 1092 (04/01/11)

APPENDIX "B"

MEMORANDUM

To: Lisa Vest

Through: Ali Mirzakhalili

From: Ron Amirikian
David Fees
Gene Pettingill

Subject: Response to Comments – October 25, 2016 Public Hearing on Revisions to Address EPA's June 12, 2015 Startup, Shutdown, and Malfunction (SSM) SIP Call (80 FR 33840)

Date: November 18, 2016

This memorandum responds to comments received from the EPA and the Sierra Club on proposed revisions to 7 DE Admin Code 1100 and the Delaware State Implementation Plan (SIP) to address EPA's June 12, 2015 Startup, Shutdown, and Malfunction (SSM) SIP Call (see 80 FR 33840). The comments were submitted for the record at the public hearing held on October 25, 2016. Note that for reasons detailed in Delaware's comments submitted to the EPA docket associated with this action (Docket ID No. EPA-HQ-OAR-2012-0322-0570), Delaware does not agree that its SIP is deficient. Despite this disagreement, Delaware has proposed revisions to its regulations and SIP to avoid the imposition of Clean Air Act (CAA) sanctions.

Delaware designed the proposed revisions to (1) remove the Director's discretion provisions from the SIP that EPA believes fails to comply with the CAA, (2) comport with EPA guidance and the regulatory structure the EPA has established in other actions, and (3) maintain the elements removed from the SIP as State-only requirements because Delaware believes the conditions are necessary to administer good air quality management policy. From an environmental perspective, the proposed revisions do not reflect any changes because the proposal retains the disputed provisions as State-enforceable-only provisions. However, since the state is removing the provisions from the SIP that EPA believes are contrary to the CAA, Delaware's action should be considered as SIP strengthening, approvable, and non-controversial.

There is general agreement that sources that rely on end-of-the-pipe control equipment to meet a short term standard may not be able to meet that standard during the start-up of the process equipment when exhaust gas conditions are not at steady state or at optimum design conditions. These conditions are generally known ahead of time or can be anticipated and conditions can be crafted to minimize emissions during those times albeit potentially above the relevant emission standard. Delaware's regulations acknowledge these factual difficulties, while maintaining stringency necessary to achieve healthy air quality. Thus, Delaware has tried to navigate around an ill-conceived EPA interpretation that would result in poor environmental outcomes in Delaware. More explicitly, Delaware's approach has been to require a permit that limits emissions during start-up and shutdown, and to subject the conditions of the permit to upfront environmental review, ample public scrutiny and demonstration that no NAAQS would be violated if the permit conditions are met. EPA has stated that their preferred approach is for

Delaware to remove the requirement for a source to obtain an alternative permit limit for start-up and shut down, to issue a permit knowing that a source cannot meet those limits during start-up and shut down, and to instead use its enforcement discretion to avoid penalizing the source when violations occur. Delaware believes that EPA's approach lacks regulatory certainty, removes upfront public or agency involvement and provides no assurance of enhanced environmental protection. Also, it is important to note that Delaware's regulations do not cover situations related to malfunctioning equipment.

Section 193 of the Act, which only applies in nonattainment areas, prohibits the modification of a SIP-approved control requirement in effect before November 15, 1990, in any manner unless the modification insures equivalent or greater emission reductions of such air pollutant. As explained further below, there will be no change in emissions as a result of this action and additionally Delaware is in attainment with respect to all the pollutants subject to this rulemaking.

With this background, below are responses to the EPA and the Sierra Club comments.

Response to comments as submitted to Ali Mirzakhalili on October 18, 2016 by Cristina Fernandez, Air Division Director of EPA Region 3.

EPA Comment #1. Delaware has proposed a revised Regulation 1104 for the SIP. Although the emission limit is not being changed, the averaging time is being changed from a two-hour average to a 30-day rolling average. Delaware has provided a statement that this change will not result in any increase in emissions on a tons per year basis, but has not addressed whether changes to the averaging period affect the emissions of any criteria pollutant. EPA does not agree that a proper evaluation of the impacts of a change of averaging period is limited to consideration solely of emissions on an annual basis. A more robust explanation and analysis must be provided to support your conclusion and address the CAA section 110(l) requirement that this revision will not interfere with attainment or reasonable further progress nor any other applicable requirement of the CAA. At a minimum, Delaware should explain how this change will not impact attainment and maintenance of the national ambient air quality standards (NAAQS) as well as explain how this change meets the applicable legal requirements of the CAA including both sections 110(l) and 193.

DAQ Response.

EPA requested a more robust explanation and analysis to support Delaware's conclusion that the proposed revision to 1104 will not interfere with attainment or reasonable further progress or any other applicable CAA requirement.

Delaware is reluctant to attempt to justify as SIP strengthening its response to a SIP Call with which it disagrees. Delaware believes EPA's SIP Call is based on unfounded speculation, as EPA has not, and cannot, produce a single example of where Delaware's longstanding regulation has not produced environmentally protective permits that have helped Delaware make significant progress towards attainment, nor where EPA's oversight has been necessary or has produced added environmental protection in the history of implementing this regulation. Delaware's air quality trends show steady improvements with the existing regulatory structure, and we are at the point where most of Delaware's poor air quality is due

to sources outside of Delaware. Indeed, EPA's resources would be better utilized if directed towards reducing interstate transport rather than focusing on what EPA claims as Delaware's start-up and shutdown deficiency. Nonetheless, in addition to making changes to the regulation to obviate the need for the provisions EPA finds offensive, Delaware has retained its original requirements as State-enforceable-only. Consequently, Delaware does not believe the changes in the SIP will interfere with attainment or reasonable further progress or any other applicable CAA requirement.

In order to issue a permit with federal conditions that are possible, Delaware changed the averaging time to a 30-day rolling average. Long-standing EPA guidance allows 30-day averaging periods. See, for example, the January 20, 1984 guidance memorandum, Averaging Times for Compliance with VOC Emission Limits - SIP Revision Policy, from John R. O'Connor, Acting Director, which indicates, *"Averaging periods must be as short as practicable and in no case longer than 30 days."* Since the SIP will no longer retain the flexibility from the federal perspective to adopt specific start-up and shutdown emissions limitations, the 30-day rolling averaging period allowed by EPA guidance will enable Delaware to issue permits that can cover start-up and shutdown situations.

Even if Delaware had adopted a longer term average than the 30-day averaging period which EPA specifies is the longest period allowed in its guidance, it would not be inconsistent with EPA's practices. Inexplicably, EPA has determined that averaging times even longer than 30-day rolling average are appropriate to protect NAAQS with short averaging times. In the EPA response to comments document associated with the recent CSAPR Update ruling EPA states in support of their program which is based on an ozone season average, "*Commenters supportive of short term limits argue that the form of the standard implies that season-long emissions budgets do not align with the form of the standard and will not ensure that emission reductions occur on days with high ozone concentrations. However, as described in section IV.B.1, seasonal NOX requirements have demonstrated success at reducing peak ozone concentrations. For example, over the past decade, there has been significant improvement in ozone across the eastern U.S., in part due to season-long allowance trading programs. As a result, areas are now attaining the 1997 ozone NAAQS. Further, EPA notes that the standard is a three-year average value of three individual seasonal values. Thus, a seasonal program is harmonious with the form of the standard.*" Also, note that under the EPA CAIR program EPA regulated SO_2, a fine particulate matter precursor, on an annual average basis, despite the existence of the 24-hour fine particulate matter standard. Delaware believes that the most appropriate emissions standard is one where emission averaging periods are closely aligned with compliance with the NAAQS. For that reason, Delaware is retaining its 2-hour averaging period as a state enforceable limit. Regarding the statement in Delaware's proposed SIP document that Delaware does not believe annual emissions will increase under this proposed revision, the following example supports this claim:

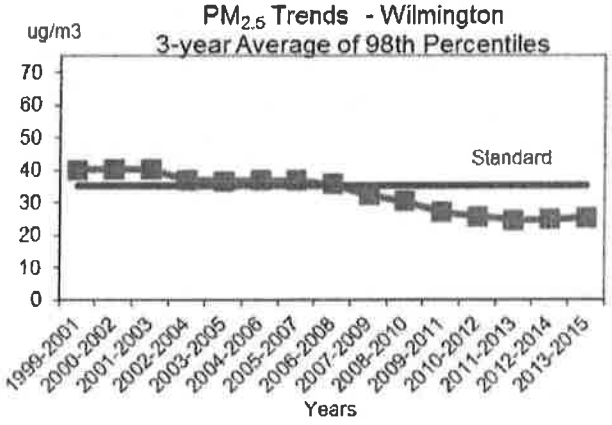
(1) Under Delaware's State-only 1104 regulation that will still allow alternate permit-approved start-up and shutdown (SS) emission rates, the short-term emissions for SS could be greater than 0.3 lb/MMBtu. Then if all steady-state hours of operation emit exactly, or very nearly, 0.3 lb/MMBtu, then the long-term average of emissions would be slightly higher than 0.3 lb/MMBtu.

(2) Under the 30-day rolling average of 0.3 lb/MMBtu, while there is no limit regarding short-term SS emission rates, whatever higher emissions occurred during SS would be offset by lower than 0.3 lb/MMBtu emissions in order for the 30-day rolling average to be no more than 0.3 lb/MMBtu.

Thus, with respect to annual emissions, since the calculation in (2) above is less than in (1), Delaware's proposed SIP revision would be SIP strengthening even without the source being required to comply with both (1) and (2) which will be the practical reality.

It is also important to consider what NAAQS the regulation relates to when evaluating whether the proposed change would interfere with attainment or reasonable further progress towards attaining that NAAQS. Regulation 1104 was adopted in 1971 to address the total suspended particulate (TSP) NAAQS that EPA established in 1971. In 1987, EPA replaced the TSP-based particulate matter indicator with PM10 and PM2.5 NAAQSs, and Delaware adopted new PM10 and PM2.5 NAAQSs into 7 DE Admin. Code 1103. Since 7 DE Admin. Code 1104 was added to Delaware's SIP in response to the TSP NAAQS which no longer exists at the federal level, and 1104 was not designed or intended to limit PM10 or PM2.5 emissions, Delaware does not believe that modifying 1104 in the SIP would interfere with attainment or reasonable further progress with the PM10 or PM2.5 NAAQS.

Finally, Regulation 1104 regulates particulate matter from fuel burning equipment. In response to a nonattainment designation for PM2.5 Delaware developed and submitted to the EPA attainment demonstration and maintenance plan SIPs. These SIPs demonstrated that sulfates and nitrates were the primary cause of particulate pollution in Delaware. Delaware employed a strategy to aggressively regulate SO_2 and NOx emissions (see prior SIPs), the strategy worked, and Delaware is now in attainment for all PM related NAAQS. Delaware's air quality has improved significantly relative to particulate matter since the 1990's. The graph below shows a significant decline in particulate matter concentrations beginning in 2008. This decline corresponds to Delaware's regulation of NOx and SO_2 emissions from the Delaware City Refinery and from coal and oil fired EGUs, along with new federal on-road mobile fuel and tailpipe standards. So the 24-hour PM2.5 NAAQS is protected primarily by Delaware's SO_2 and NOx control measures, and not 1104.



Since Delaware has (1) removed the Director's discretion provision from the SIP that EPA has identified as deficient, (2) demonstrated that a 30-day rolling average is consistent with EPA guidance and example, (3) demonstrated that allowable annual emissions are consistent with significant EPA control strategies, and that annual emissions cannot increase under the proposed change, (4) demonstrated that Delaware is well in compliance with all particulate matter NAAQS because of a significant decline in particulate matter concentrations which corresponds to control strategies other than 1104, and given that (5) the 1104 emission limits remain unchanged, Delaware has demonstrated that this change will not impact attainment and maintenance of the applicable NAAQS, and that it meets the applicable legal requirements of the CAA. Again, note that Delaware is proposing these revisions to its SIP because it is being forced to under the EPA threat of CAA sanctions, and that this action in no way implies that Delaware agrees with this EPA action or believes that long term averages comport with good air quality management policy. Separate from the portion of this action that is associated with a revision to the SIP, Delaware is retaining the two-hour average compliance demonstration as a State-enforceable requirement and is continuing to challenge EPA for allowing long term averaging in upwind states that is a significant cause of unhealthy air in Delaware.

EPA Comment #2. Delaware has proposed a revised Regulation 1105 for the SIP. Although the emission limit is not being changed, a 30-day averaging time is being added. Delaware has provided a statement that this change will not result in any increase in emissions on a tons per year basis, but has not addressed whether changes to the averaging period affect the emissions of any criteria pollutant. EPA does not agree that a proper evaluation of the impacts of a change of averaging period is limited to consideration solely of emissions on an annual basis. A more robust explanation and analysis should be provided to support your conclusion in order to meet the CAA 110(1) requirement. Delaware should explain that this change will not impact attainment and maintenance of the NAAQS, as well as explain how this change meets the applicable legal requirements of the CAA, including CAA section 193. Furthermore, EPA notes a numbering typo under section 2.2 of the draft SIP submission. The subsections should be numbered 2.2.1 and 2.2.2, not 2.1.1 and 2.1.2.

DAQ Response. EPA requested a more robust explanation and analysis to support Delaware's conclusion that the proposed revision to 1105 will not interfere with attainment or reasonable further progress or any other applicable CAA requirement.

Delaware is reluctant to attempt to justify as SIP strengthening its response to a SIP Call with which it disagrees. Delaware believes EPA's SIP Call is based on unfounded speculation, as EPA has not, and cannot, produce a single example of where Delaware's longstanding regulation has not produced environmentally protective permits that have helped Delaware make significant progress towards attainment, nor where EPA's oversight has been necessary or has produced added environmental protection in the history of implementing this regulation. Delaware's air quality trends show steady improvements with the existing regulatory structure, and we are at the point where most of Delaware's poor air quality is due to sources outside of Delaware. Indeed, EPA's resources would be better utilized if directed towards reducing interstate transport rather than focusing on what EPA claims as Delaware's start-up and shutdown deficiency. Nonetheless, in addition to making changes to the regulation to obviate the need for the provisions EPA finds offensive, Delaware has retained its original requirements as State-enforceable-only. Consequently, Delaware does not

believe the changes in the SIP will interfere with attainment or reasonable further progress or any other applicable CAA requirement.

In order to issue a permit with federal conditions that are possible, Delaware changed the averaging time to a 30-day rolling average. Long-standing EPA guidance allows 30-day averaging periods. See, for example, the January 20, 1984 guidance memorandum, Averaging Times for Compliance with VOC Emission Limits - SIP Revision Policy, from John R. O'Connor, Acting Director, which indicates, *"Averaging periods must be as short as practicable and in no case longer than 30 days."* Since the SIP will no longer retain the flexibility from the federal perspective to adopt specific start-up and shutdown emissions limitations, the 30-day rolling averaging period allowed by EPA guidance will enable Delaware to issue permits that can cover start-up and shutdown situations.

Even if Delaware had adopted a longer term average than the 30-day averaging period which EPA specifies is the longest period allowed in its guidance, it would not be inconsistent with EPA's practices. Inexplicably, EPA has determined that averaging times even longer than 30-day rolling average are appropriate to protect NAAQS with short averaging times. In the EPA response to comments document associated with the recent CSAPR Update ruling EPA states in support of their program which is based on an ozone season average, "*Commenters supportive of short term limits argue that the form of the standard implies that season-long emissions budgets do not align with the form of the standard and will not ensure that emission reductions occur on days with high ozone concentrations. However, as described in section IV.B.1, seasonal NOX requirements have demonstrated success at reducing peak ozone concentrations. For example, over the past decade, there has been significant improvement in ozone across the eastern U.S., in part due to season-long allowance trading programs. As a result, areas are now attaining the 1997 ozone NAAQS. Further, EPA notes that the standard is a three-year average value of three individual seasonal values. Thus, a seasonal program is harmonious with the form of the standard.*" Also, note that under the EPA CAIR program EPA regulated SO_2, a fine particulate matter precursor, on an annual average basis, despite the existence of the 24-hour fine particulate matter standard. Delaware believes that the most appropriate emissions standard is one where emission averaging periods are closely aligned with compliance with the NAAQS. For that reason, Delaware is retaining its 2-hour averaging period as a state enforceable limit. Regarding the statement in Delaware's proposed SIP document that Delaware does not believe annual emissions will increase under this proposed revision, the following example supports this claim:

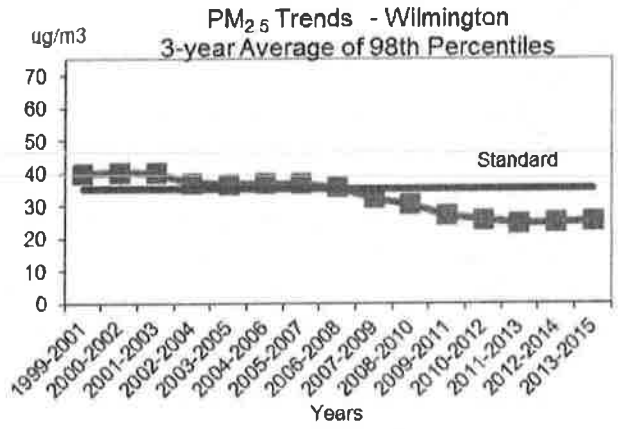
(1) Under Delaware's State-only 1105 regulation that will still allow alternate permit-approved start-up and shutdown (SS) emission rates, the short-term emissions for SS could be greater than 0.2 grains/scf. Then if all steady-state hours of operation emit exactly, or very nearly, 0.2 grains/scf, then the long-term average of emissions would be slightly higher than 0.2 grains/scf.

(2) Under the 30-day rolling average of 0.2 grains/scf, while there is no limit regarding short-term SS emission rates, whatever higher emissions occurred during SS would be offset by lower than 0.2 grains/scf emissions in order for the 30-day rolling average to be no more than 0.2 grains/scf.

Thus, with respect to annual emissions, since the calculation in (2) above is less than in (1), Delaware's proposed SIP revision would be SIP strengthening even without the source being required to comply with both (1) and (2) which will be the practical reality.

It is also important to consider what NAAQS the regulation relates to when evaluating whether the proposed change would interfere with attainment or reasonable further progress towards attaining that NAAQS. Regulation 1105 was adopted in 1971 to address the total suspended particulate (TSP) NAAQS that EPA established in 1971. In 1987, EPA replaced the TSP-based particulate matter indicator with PM10 and PM2.5 NAAQSs, and Delaware adopted new PM10 and PM2.5 NAAQSs into 7 DE Admin. Code 1103. Since 7 DE Admin. Code 1105 was added to Delaware's SIP in response to the TSP NAAQS which no longer exists at the federal level, and 1105 was not designed or intended to limit PM10 or PM2.5 emissions, Delaware does not believe that modifying 1105 in the SIP would interfere with attainment or reasonable further progress with the PM10 or PM2.5 NAAQS.

Finally, 1105 regulates particulate matter from industrial process operations. In response to a nonattainment designation for PM2.5 Delaware developed and submitted to the EPA attainment demonstration and maintenance plan SIPs. These SIPs demonstrated that sulfates and nitrates were the primary cause of particulate pollution in Delaware. Delaware employed a strategy to aggressively regulate SO_2 and NOx emissions (see prior SIPs), the strategy worked, and Delaware is now in attainment for all PM related NAAQS. Delaware's air quality has improved significantly relative to particulate matter since the 1990's. The graph below shows a significant decline in particulate matter concentrations beginning in 2008. This decline corresponds to Delaware's regulation of NOx and SO_2 emissions from the Delaware City Refinery and from coal and oil fired EGUs, along with new federal on-road mobile fuel and tailpipe standards. So the 24-hour PM2.5 NAAQS is protected primarily by Delaware's SO_2 and NOx control measures, and not 1105.



Since Delaware has (1) removed the Director's discretion provision from the SIP that EPA has identified as deficient, (2) demonstrated that a 30-day rolling average is consistent with EPA guidance and example, (3) demonstrated that allowable annual emissions are consistent with significant EPA control strategies, and that annual emissions cannot increase under the proposed change, (4) demonstrated that Delaware is well in compliance with all particulate

matter NAAQS because of a significant decline in particulate matter concentrations which corresponds to control strategies other than 1105, and given that (5) the 1105 emission limits remain unchanged, Delaware has demonstrated that this change will not impact attainment and maintenance of the applicable NAAQS, and that it meets the applicable legal requirements of the CAA. Again, note that Delaware is proposing these revisions to its SIP because it is being forced to under the EPA threat of CAA sanctions, and that this action in no way implies that Delaware agrees with this EPA action or believes that long term averages comport with good air quality management policy. Separate from the portion of this action that is associated with a revision to the SIP, Delaware is retaining 0.2 grains/scf without a long-term compliance demonstration as a State-enforceable requirement and is continuing to challenge EPA for allowing long term averaging in upwind states that is a significant cause of unhealthy air in Delaware.

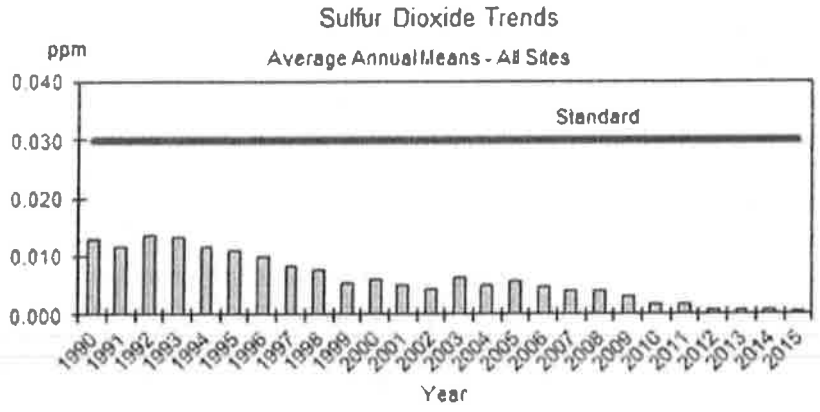
Also, the subsections numbering error that EPA noted was identified and fixed prior to submission of the proposed SIP document to the Delaware Register, thus no change is required.

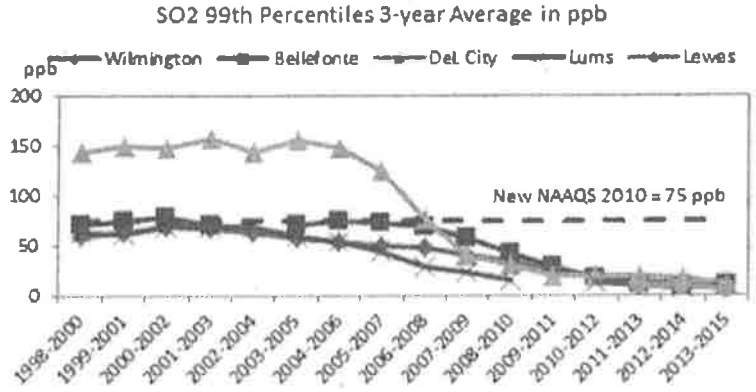
EPA Comment #3. Delaware is proposing to remove Regulation 1109 from the SIP. To address CAA section 110(l), Delaware simply states that the removal will not result in any increase in emissions on a ton per year basis and states that existing federal requirements, such as New Source Performance Standards (NSPS), are adequate to ensure attainment and maintenance of sulfur related NAAQS in Delaware without further explanation. Delaware's explanation and reliance upon unnamed NSPS is insufficient. First, some NSPS may contain SSM exemptions especially if EPA has not recently revised them. EPA is reviewing such NSPS for any such exemptions for compatibility with EPA policy. In addition, the NSPS do not cover all sources of sulfur dioxides or sulfur oxides as they apply only to new and modified sources. Delaware provided no further explanation on which specific NSPS or other federal requirement covers or regulates the universe of sources addressed by Regulation 1109 in Delaware. Regulation 1109 appears applicable to a narrow source category that emits sulfur compounds. Additionally, Delaware has provided a statement that this change will not result in any increase in emissions on a tons per year basis, but has not addressed whether the removal of Regulation 1109 will affect the emission of any criteria pollutant. A more robust explanation and analysis should be provided to support your conclusion in order to meet the CAA 110(l) requirement. Delaware should explain that this change will not impact attainment and maintenance of the NAAQS, as well as explain how this change meets the applicable legal requirements of the CAA, including CAA section 193. Further, Delaware relied upon Regulation 1109 in the 2010 SO_2 infrastructure SIP for purposes of compliance with CAA section 110(a)(2)(A). Thus, Delaware must address whether removal of Regulation 1109 from the SIP impacts the State's compliance with basic CAA requirements for SO_2, including specifically for purposes of the 2010 SO_2 NAAQS. A more robust justification and analysis than what has been submitted is necessary to support a conclusion that removing Regulation 1109 from the SIP does not interfere with attainment and maintenance of the NAAQS nor any other applicable requirement, such as CAA section 110(a)(2), to meet the CAA section 110(l) requirement. Delaware must also explain how this change would be consistent with the legal requirements of CAA section 193.

DAQ Response. Delaware proposes to remove 7 DE Admin Code 1109 from the SIP which regulates SO_2 emissions from sulfuric acid manufacturing and recovery operations.

Delaware conducted an in-depth investigation and determined that there are two facilities in Delaware to which 7 DE Admin Code 1109 could potentially apply; the Chemours Red Lion sulfuric acid plant and the Delaware City Refinery. Delaware reviewed these facilities and their current permits and found that both are subject to the applicable NSPS (Subpart H for Red Lion and Subpart J for the Refinery). Delaware evaluated and determined that the NSPS, in both cases, is more stringent than 1109. However, since the applicable NSPS contains excess emissions standards over a 12-hour period for Subpart J and for a three-hour period for Subpart H, as suggested by EPA in their comments, then EPA should evaluate these allowances and revise them as expeditiously as possible if EPA determines they are not protective of the SO_2 or PM NAAQS. Since the NSPS is not the subject of this SIP Call and since 1109 is not used to regulate any facility in Delaware, 1109 can be removed from the SIP and will not interfere with attainment and maintenance of the NAAQS nor any other applicable CAA requirement. To address CAA Section 110(l), the removal will not result in any increase in emissions of SO_2 (on a ton per year basis or otherwise) and that existing NSR (New Source Review) and New Source Performance Standards (NSPS) are adequate to ensure attainment and maintenance of the sulfur-related NAAQS in Delaware.

Furthermore, Delaware's air quality has improved significantly relative to SO_2 since the 1990's. The graphs below show a significant decline in SO_2 concentrations beginning in 2008. This decline corresponds to Delaware's regulation of SO_2 emissions from the Delaware City Refinery and from coal and oil fired EGUs, along with new federal on-road mobile fuel and tailpipe standards.





The steep decline in SO2 emissions is evident in the table below. In 2008, point sources accounted for 93% of SO2 emissions in Delaware, and as of 2014, SO2 point source emissions have decreased by over 95% since 2008.

Annual Statewide Point Source Emissions	Tons/year
2008	41,101
2011	11,485
2014	1,844

Finally, Delaware believes actions the EPA has taken relative to the 2010 SO_2 NAAQS are inconsistent with their comments on Delaware's strategy to protect this NAAQS. The 2010 SO_2 NAAQS is yet another example of EPA relying on annual emissions to evaluate a short-term standard. In implementing the 2010 75 ppb 1-hour SO_2 standard EPA adopted per the Data Requirements Rule an analysis of facilities with annual emissions equal to or greater than 2,000 tons/year for evaluating a facility's potential to cause an exceedance of the 1-hour standard. Delaware had no such facilities based on the 2014 emissions. By contrast, in 2013, Delaware followed the scientifically sound approach of assessing hourly potential-to-emit SO_2 emission rates from Delaware facilities through air dispersion modeling that demonstrated facilities with emissions much less than 2,000 tons/year could result in a violation of the NAAQS. Delaware demonstrated that, contrary to the EPA approach, smaller oil burning sources with short stacks had more impact on the 1-hour NAAQS than large well controlled sources. As a result of our analysis, Delaware established the appropriate permit limitations so that no source is currently causing, or has the potential in the future to cause, an exceedance of the 2010 NAAQS. The requirements of 1109 do not impact this prior analysis which was submitted to the EPA in June 2013.

So, given that Delaware has (1) removed the Director's discretion provision from the SIP that EPA has identified as deficient, and (2) demonstrated that Delaware is well in compliance with all SO_2 NAAQS, and that a significant decline in SO_2 concentrations corresponds to control strategies other than 1109, and 3) demonstrated that all applicable sources in Delaware are covered by NSPS, Delaware has demonstrated that this change will not impact attainment and maintenance of the applicable NAAQS, and that it meets the applicable legal requirements of the CAA. Again, note that Delaware is proposing these revisions to its SIP because it is being forced to under the EPA threat of CAA sanctions, and that this action in no way implies that Delaware agrees with this EPA action or believes EPA's approach comports with good air quality management policy. Separate from the portion of this action that is associated with a revision to the SIP, Delaware is retaining 1109 unchanged.

EPA Comment #4. Delaware is also proposing to remove Regulation 1114 from the SIP. To address CAA section 110(l), Delaware states that the removal will not result in any increase in emissions on a ton per year basis without further explanation or any technical demonstration. Delaware also states that existing federal requirements like NSPS regulate visible emissions and that other Delaware SIP regulations that regulate fine particulate matter and fine particulate matter precursors such as Regulations 1108 and 1146 are adequate to ensure attainment and maintenance of any particulate related NAAQS in Delaware. Notably,

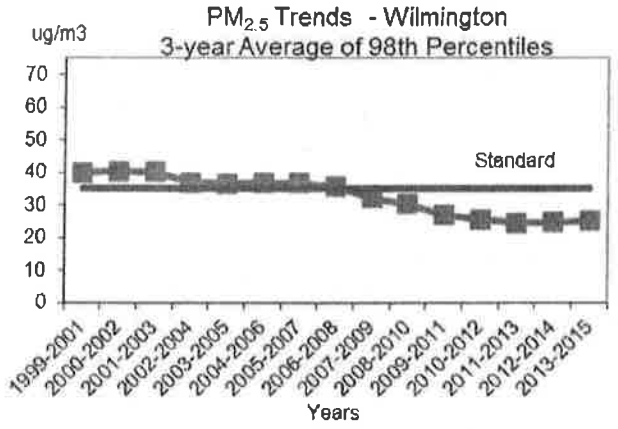
EPA disagrees with Delaware's unsupported assertion that there is no quantifiable relationship between visible emissions and fine particulate matter emissions. EPA believes that Delaware's explanation to address CAA section 110(l) for the removal of Regulation 1114 from the SIP is insufficient. As mentioned previously in EPA's comment on Delaware's proposal to remove Regulation 1109 from the SIP, the NSPS cannot be relied upon to show removal of emission limitations from the SIP will not interfere with attainment of the NAAQS or any other CAA requirement because the NSPS do not address all the sources of visible emissions that Regulation 1114 addresses and some NSPS may also contain SSM exemptions until EPA revises them. Delaware has not identified which NSPS apply to sources that would otherwise be regulated by Regulation 1114 and has not demonstrated whether all such sources are sufficiently regulated for particulate matter by Delaware through other federally enforceable regulations. Delaware must explain how removing Regulation 1114 would be consistent with the applicable legal requirements of the CAA, including sections 110(l) and 193.

DAQ Response. Delaware proposes that 7 DE Admin Code 1114 be removed from the SIP because there is no discernable relationship between a visibility measurement (opacity) of 20% based upon the reduction of light transmitted through a plume of particles emitted from a stack and measured visually and the amount of PM10 or PM2.5 particulate matter emitted. The method of opacity measurement is specified in Reference Method 9 as set forth in Appendix A of 40 CFR Part 60 (revised July 1, 1982). In a publication by USEPA, Office of Air Quality Planning and Standards, *"Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring"* September 2000, EPA says that specific PM emissions cannot be determined from a given level of opacity or from an increase in opacity. The Environment Maryland Research & Policy Center published a study in June 2007 *"Particulate Matter Pollution from Maryland Power Plants"* in which they determined that *"Data on the relationship between opacity and PM emissions suggest that periodic increases allowed in the opacity standard likely result in emissions multiple times above the legal PM emissions limit."* This 16-page report concluded that *"to accurately assess- and thus be able to limit-PM pollution from the state's many coal-fired power plants, Maryland should require the installation of continuous emission monitoring (CEM) equipment for PM."* Since the visibility measurement discussed above cannot quantify the amount of PM the tested source is emitting, then the visibility measurement discussed above cannot be relied upon to prevent the tested stationary source from having an impact on the PM NAAQS.

1114 took effect in 1971 as part of Delaware's plan to address the TSP NAAQS that EPA established in 1971. In 1987 the EPA replaced the TSP based particulate matter indicator with PM10 and PM2.5 NAAQSs. Delaware adopted these new PM10 and PM2.5 NAAQSs, and also maintained TSP based standards in 7 DE Admin. Code 1103. 7 DE Admin. Code 1114 was added to Delaware's SIP in response to the TSP NAAQS which no longer exits, and is now in place to primarily protect aesthetics and the TSP standard that Delaware maintains in 1103. 1114 does not appropriately limit PM10 or PM2.5 emissions nor is it an appropriate indicator. This is because fine particulate matter problems in Delaware were caused primarily by secondary formation and not by direct stack particulate matter emissions.

In response to a nonattainment designation for PM2.5 Delaware developed attainment demonstration and maintenance plan SIPs. These SIPs demonstrated that sulfates and nitrates were the primary cause of particulate pollution in Delaware. Delaware employed a

strategy to aggressively regulate SO_2 and NOx emissions (see prior SIPs), the strategy worked, and Delaware is now in attainment for all PM related NAAQS. Delaware's air quality has improved significantly relative to particulate matter since the 1990's. The graph below shows a significant decline in particulate matter concentrations beginning in 2008. This decline corresponds to Delaware's regulation of NOx and SO_2 emissions from the Delaware City Refinery and from coal and oil fired EGUs, along with new federal on-road mobile fuel and tailpipe standards. So the 24-hour PM2.5 NAAQS is protected primarily by Delaware's SO_2 and NOx control measures, and not opacity under 1114.



So, given that Delaware has (1) removed the Director's discretion provision from the SIP that EPA has identified as deficient, and (2) demonstrated that Delaware is well in compliance with all particulate matter NAAQS because of a significant decline in particulate matter concentrations which corresponds to control strategies other than 1114, Delaware has demonstrated that this change will not impact attainment and maintenance of the applicable NAAQS, and that it meets the applicable legal requirements of the CAA. Again, note that Delaware is proposing these revisions to its SIP because it is being forced to under the EPA threat of CAA sanctions, and that this action in no way implies that Delaware agrees with this EPA action or believes that excess opacity comports with good air quality management policy, to include aesthetics. Separate from the portion of this action that is associated with a revision to the SIP, Delaware is retaining its opacity regulation unchanged.

Response to a comment letter submitted to David Fees on October 25, 2016 by Joshua Smith, Staff Attorney of the Sierra Club.

Sierra Club Comment #1. Delaware has not provided any technical support for the statement that the particulate matter revisions of 1104 and 1105 will not change the annual emissions, and requests a technical justification for the proposition that that annual emissions will not increase as a result of the proposed revision.

DAQ Response. See response to a similar comment by EPA above. In summary, because Delaware is retaining the standard there will be no emissions change but the following example supports the claim that annual emissions will not increase as a result of the revisions

to 1104 (and similarly for 1105) even without the caveat:

(1) Under Delaware's State-only 1104 regulation that will still allow alternate permit-approved start-up and shutdown (SS) emission rates, the short-term emissions for SS could be greater than 0.3 lb/MMBtu. Then if all steady-state hours of operation emit exactly, or very nearly, 0.3 lb/MMBtu, then the long-term average of emissions would be slightly higher than 0.3 lb/MMBtu.

(2) Under the 30-day rolling average of 0.3 lb/MMBtu, while there is no limit regarding short-term SS emission rates, whatever higher emissions occurred during SS would be offset by lower than 0.3 lb/MMBtu emissions in order for the 30-day rolling average to be no more than 0.3 lb/MMBtu.

Thus, with respect to annual emissions, since the calculation in (2) above is less than in (1), Delaware's proposed SIP revision would be SIP strengthening even without the source being required to comply with both (1) and (2) which will be the practical reality.

Sierra Club Comment #2. The Sierra Club commented that the proper averaging period for particulate matter should be determined on a case-by-case determination based on specific facts for a given source or source category. To ensure a similar stringency, a longer averaging period should be accompanied by a *smaller* numerical value for the allowable emissions. By allowing a longer than two-hour average simply in order to absorb or smooth-out high SSM emissions, Delaware's proposal undermines the core purpose of EPA's SSM SIP Call—namely, to require the use of emissions controls to the maximum degree possible, best work practices, and cleaner fuels to minimize the high emissions during SSM time periods. To comply with EPA's SIP Call and the Clean Air Act itself, Delaware cannot simply average away unlawful emissions.

DAQ Response. Delaware agrees with the comment that the proper averaging period for particulate matter should be determined on a case-by-case determination based on specific facts for a given source or source category. In fact, this is what Delaware has done through its regulations and source permitting to ensure all start-up, shutdown, and continuous operation emissions are protective of the NAAQS. Delaware will continue to do so with its State-only regulations.

While Delaware agrees with this concept, and made similar comments to the EPA when they first proposed this SSM, Delaware does not agree the Sierra Club is accurately applying this concept to Delaware. When Delaware adopts regulations it adopts tight emissions standards with tight averaging times that apply at all times, and provides a process to establish alternate limits that apply during start-up and shutdown under its SIP approved 1102 permitting program. The Sierra Club comment does not accurately characterize the Delaware case -- Delaware adopted a tight standard and avoided the need for a long averaging time or a lax standard by providing a process to establish alternate limits that apply during start-up and shutdown under its SIP approved 1102 permitting program. In this action we are maintaining the tight standard and providing for compliance to be demonstrated on a 30-day rolling average instead of explicitly addressing start-up and shutdown on a case-by-case basis. Again, we are doing this not because we agree with it, but rather because it is consistent with EPA's approach. To protect Delaware's air quality, to include its TSP standard, Delaware is

maintaining its current requirements as State-only requirements.

Also, this comment by the Sierra Club regarding Delaware's SIP revision is inconsistent with their own position in the March 2, 2015 Consent Decree that they signed with EPA (Case3:13-cv-03953-SI Document162 Filed03/02/15 Page7 of 20) where Sierra Club agrees to use an annual average emission rate as a way of protecting against the one-hour SO_2 standard. EPA in implementing the 2010 75 ppb 1-hour SO_2 standard, adopted per the Data Requirements Rule an analysis of facilities with annual emissions equal to or greater than 2,000 tons/year for evaluating a facility's potential to cause an exceedance of the 1-hour standard. The consent decree states, *"if the Data Requirements Rule is adopted, the data collection process proposed in the rule could be used to support EPA's designations under the consent decree."* Clearly the Sierra Club believes a data averaging period does not need to be consistent with the NAAQS to assess compliance with the NAAQS. We view this as bad air quality policy for the reasons detailed in the response to the similar comment made by the EPA above.

Sierra Club Comment #3. The Sierra Club commented that Delaware fails to demonstrate that its revised SIP emission limits for particulate matter are legally and practically enforceable because the revisions do not specify how compliance with the thirty-day limit (or any replacement averaging time period) will be demonstrated. While compliance with the existing 2-hour allowable limit might be demonstrated using stack tests, it is not practical to use stack tests for PM compounds for 30 days (or even 24- hours). If Delaware's intent is that PM continuous emissions monitoring systems ("CEMS") will be used as the method of compliance, the State must include that enforceable requirement in the SIP revision.

DAQ Response. The revisions to 1104 and 1105 under this action address only the EPA SIP Call. Separate from this action all applicable requirements, to include the requirements of 1104 and 1105, are explicitly required by Delaware's SIP to be made practically enforceable. 7 DE Admin. Code 1102 is approved by the EPA in Delaware's SIP, and 11.9 of 1102 provides that:

11.9 Each emission rate and standard shall be enforceable as a practical matter. Enforceable as a practical matter means that each emission rate and standard:

11.9.1 Is stated in the permit as a technically specific and accurate limitation.

11.9.2 Is specifically associated with a particular piece or pieces of equipment or air contaminant control device or devices.

11.9.3 Has associated conditions which, in total, establish a method to determine compliance. Such associated conditions shall include appropriate testing, monitoring, record keeping, and reporting requirements.

11.9.4 Has a recurring, predictable time period under which compliance with the limitation will be demonstrated. Such time period shall be that specified in the underlying State regulation or federal rule or, in the absence of such specification and upon approval by the Department, shall be hourly, daily, monthly, or some other time period

which provides for the demonstration of compliance with the limitation no less frequently than monthly.

So Delaware does not agree with the Sierra Club because its SIP does ensure the revised SIP emission limits are legally and practically enforceable.

Sierra Club Comment #4. The Sierra Club comments that Delaware fails to properly justify the elimination of opacity emission limits from the SIP. The comments indicate that Delaware justifies its revision to the opacity regulations on the grounds that "there is no quantifiable relationship between visibility emissions and fine particulate matter emissions." 20 DE Reg. 317 at 2.5. This is technically incorrect. Reduced visibility (*i.e.*, opacity) often results from fine particulate matter emissions. While it is correct that there is no universal relationship between opacity and particulate matter (*i.e.*, applicable to all sources at all times), it is incorrect that there is "*no quantifiable relationship*." The State should strike this sentence.

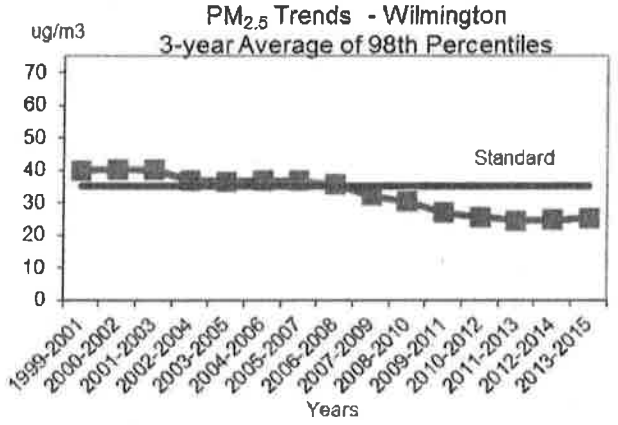
DAQ Response. Sierra Club's comment did not provide any supporting information to indicate that mass emissions of particulate matter, such as PM2.5 and PM10, can be determined by the use of an opacity reading so we cannot judge its merit. The Delaware opacity regulation has been in existence for decades and was implemented at a time when TSP was the form of the particulate emissions NAAQS.

Delaware proposes that 7 DE Admin Code 1114 be removed from the SIP because there is no discernable relationship between a visibility measurement (opacity) of 20% based upon the reduction of light transmitted through a plume of particles emitted from a stack and measured visually and the amount of PM10 or PM2.5 particulate matter emitted. The method of opacity measurement is specified in Reference Method 9 as set forth in Appendix A of 40 CFR Part 60 (revised July 1, 1982). In a publication by USEPA, Office of Air Quality Planning and Standards, *"Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring"* September 2000, EPA says that specific PM emissions cannot be determined from a given level of opacity or from an increase in opacity. The Environment Maryland Research & Policy Center published a study in June 2007 *"Particulate Matter Pollution from Maryland Power Plants"* in which they determined that *"Data on the relationship between opacity and PM emissions suggest that periodic increases allowed in the opacity standard likely result in emissions multiple times above the legal PM emissions limit."* This 16-page report concluded that *"to accurately assess- and thus be able to limit-PM pollution from the state's many coal-fired power plants, Maryland should require the installation of continuous emission monitoring (CEM) equipment for PM."* Since the visibility measurement discussed above cannot quantify the amount of PM the tested source is emitting, then the visibility measurement discussed above cannot be relied upon to prevent the tested stationary source from having an impact on the PM NAAQS.

1114 took effect in 1971 as part of Delaware's plan to address the TSP NAAQS that EPA established in 1971. In 1987 the EPA replaced the TSP based particulate matter indicator with PM10 and PM2.5 NAAQSs. Delaware adopted these new PM10 and PM2.5 NAAQSs, and also maintained TSP based standards in 7 DE Admin. Code 1103. 7 DE Admin. Code 1114 was added to Delaware's SIP in response to the TSP NAAQS which no longer exits,

and is now in place to primarily protect aesthetics and the TSP standard that Delaware maintains in 1103. 1114 does not appropriately limit PM10 or PM2.5 emissions nor is it an appropriate indicator. This is because fine particulate matter problems in Delaware were caused primarily by secondary formation and not by direct stack particulate matter emissions.

In response to a nonattainment designation for PM2.5 Delaware developed attainment demonstration and maintenance plan SIPs. These SIPs demonstrated that sulfates and nitrates were the primary cause of particulate pollution in Delaware. Delaware employed a strategy to aggressively regulate SO_2 and NOx emissions (see prior SIPs), the strategy worked, and Delaware is now in attainment for all PM related NAAQS. Delaware's air quality has improved significantly relative to particulate matter since the 1990's. The graph below shows a significant decline in particulate matter concentrations beginning in 2008. This decline corresponds to Delaware's regulation of SO_2 emissions from the Delaware City Refinery and from coal and oil fired EGUs, along with new federal on-road mobile fuel and tailpipe standards. So the 24-hour PM2.5 NAAQS is protected primarily by Delaware's SO_2 and NOx control measures, and not opacity under 1114.



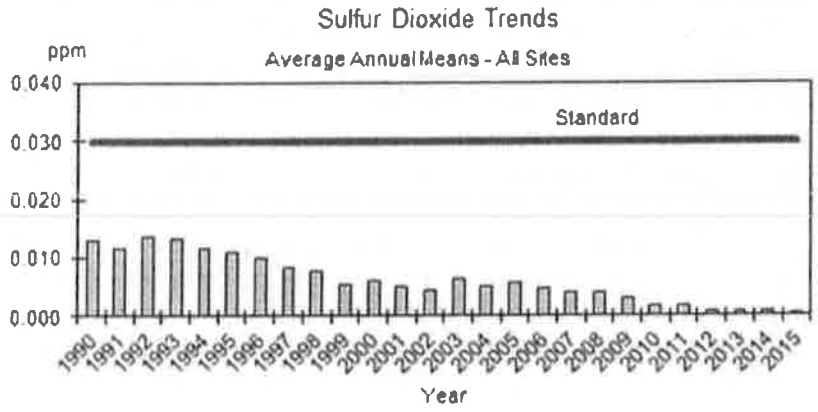
So, given that Delaware has (1) removed the Director's discretion provision from the SIP that EPA has identified as deficient, and (2) demonstrated that Delaware is well in compliance with all particulate matter NAAQS because of a significant decline in particulate matter concentrations which corresponds to control strategies other than 1114, Delaware has demonstrated that this change will not impact attainment and maintenance of the applicable NAAQS, and that it meets the applicable legal requirements of the CAA. Again, note that Delaware is proposing these revisions to its SIP because it is being forced to under the EPA threat of CAA sanctions, and that this action in no way implies that Delaware agrees with this EPA action or believes that excess opacity comports with good air quality management policy, to include aesthetics. Separate from the portion of this action that is associated with a revision to the SIP, Delaware is retaining its opacity regulation unchanged.

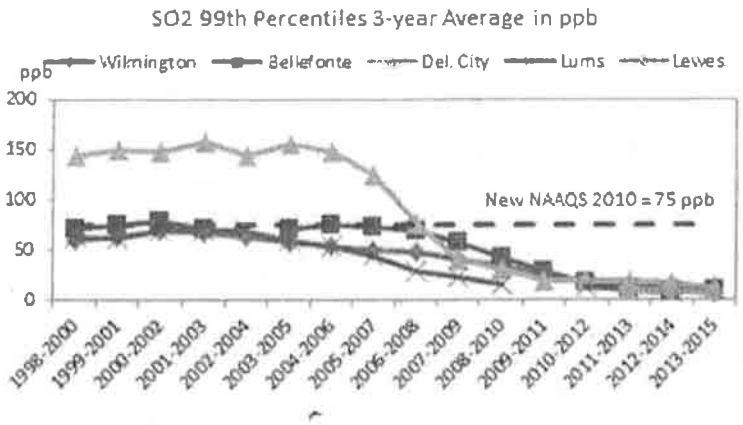
Sierra Club Comment #5. The Sierra Club comments that Delaware fails to support its assertion that current federal requirements will assure compliance with the NAAQS for sulfur dioxide. The Sierra Club points to the statement in the proposed SIP, "...believes existing federal requirements like, for example, New Source Performance Standards are adequate to ensure attainment and maintenance of sulfur related NAAQS in Delaware," and comments

that it is not clear what this belief is based on and that Delaware must provide appropriate analysis to justify this statement.

DAQ Response. Delaware proposes to remove 7 DE Admin Code 1109 from the SIP which regulates SO_2 emissions from sulfuric acid manufacturing and recovery operations. Delaware conducted an in-depth investigation and determined that there are two facilities in Delaware to which 7 DE Admin Code 1109 could potentially apply; the Chemours Red Lion sulfuric acid plant and the Delaware City Refinery. Delaware has reviewed these facilities and their current permits and found that both are subject to the applicable NSPS (Subpart H for Red Lion and Subpart J for the Refinery). Delaware evaluated and determined that the NSPS, in both cases, is deemed more stringent than 1109. Since 1109 is not used to regulate any facility in Delaware, 1109 can be removed from the SIP and will not interfere with attainment and maintenance of the NAAQS nor any other applicable CAA requirement. To address CAA Section 110(l), the removal will not result in any increase in emissions of SO_2 (on a ton per year basis or otherwise) and that existing NSR (New Source Review) and New Source Performance Standards (NSPS) are adequate to ensure attainment and maintenance of the sulfur-related NAAQS in Delaware.

Furthermore, Delaware's air quality has improved significantly relative to SO_2 since the 1990's. The graphs below show a significant decline in SO_2 concentrations beginning in 2008. This decline corresponds to Delaware's regulation of SO_2 emissions from the Delaware City Refinery and from coal and oil fired EGUs, along with new federal on-road mobile fuel and tailpipe standards.





The steep decline in SO2 emissions is evident in the table below. In 2008, point sources accounted for 93% of SO2 emissions in Delaware, and as of 2014, SO2 point source emissions have decreased by over 95% since 2008.

Annual Statewide Point Source Emissions	Tons/year
2008	41,101
2011	11,485
2014	1,844

Sierra Club Comment #6. The Sierra Club comments that the SIP fails to establish that "best engineering judgment" for nitrogen oxide emissions can assure compliance with Clean Air Act requirements during start-up and shutdown. Regarding 7 DE Admin. Code 1142 the Sierra Club indicates they agree with Delaware's proposal to repeal 2.3.1.6 of 7 DE Admin. Code 1142, and indicated they have serious concerns relative to the language "best engineering judgment" in 2.4.2.2 of 7 DE Admin. Code § 1142. The Sierra Club recommends Delaware explicitly define what that term means, and provide support for using "best engineering judgment" as an alternative compliance method, and provide examples of "best engineering judgment" in particular contexts. Their concern is that this term and similarly broad and undefined terms allowing the use of "best judgment" have often resulted in emissions estimates based on nonexistent engineering or even bad engineering "judgment." The Sierra Club contends that "Delaware's narrative SIP revision fails to address or evaluate the impact of uncontrolled nitrogen oxide emissions during start-up and shutdown on the State's nonattainment areas, or how the "best engineering judgment" standard addresses assures compliance with ozone NAAQS. This is especially troubling given that Delaware's "best engineering judgment" standard apparently applies to areas of the State that have the worst air quality in the State—New Castle and Sussex Counties. Given the huge quantities of nitrogen oxide emissions that are possible during start-up and shutdown, and given that NOx is a precursor pollutant that causes ground-level ozone, Delaware must evaluate the potential worst-case emissions that could occur during start-up/shutdown under the "best engineering judgment" standard. It appears that the State's proposal will do little (if anything) to reduce NOx emissions below the status quo, and could exacerbate New Castle and Sussex County's nonattainment status.

DAQ Response. This comment is in regard to something in 1142 that is not part of the SIP Call. The EPA perceived offending section has been removed from 1142.

Despite this, and for completeness, NOx emissions at the Delaware City Refinery are extremely well regulated. NOx emissions are regulated under 7 DE Admin Code 1112 (NOx RACT), multiple determinations under 7 DE Admin. 1125 (preconstruction review) and also under a NOx cap/PAL established pursuant to Section 2.0 of 7 DE Admin Code 1142 and 1125 that began in 2011 at 2525 TPY (i.e., actual 2008 emission levels), and decreased to 1650 TPY beginning 2015. In a March 15, 2011 SIP revision Delaware demonstrated the stringency of this cap by showing that the initial 2,525 NOx cap is significantly less than annualized EPA NOx SIP Call caps, and that the final 1650 TPY NOx cap represents a 35% reduction beyond actual 2008 levels, and more than an additional 50% reduction below EPA NOx SIP Call levels. In addition, all future growth at the refinery must occur under this NOx cap. This tight cap plus unit specific RACT and LAER limits ensure the refinery is well controlled. With this background, the purpose of 2.4.2.1 and 2.4.2.2 of 1142 is to explicitly ensure that all emissions at the facility – from both large and small units – are counted against the NOx cap, including emissions from all units during start-up, shutdown and malfunction. Given this context the Sierra Club concern is unfounded.

1104 Particulate Emissions from Fuel Burning Equipment

1/11/2017

1.0 General Provisions

1.1 The emission of particulate matter from fuel burning equipment shall be controlled to a limit that shall meet the ambient air quality requirements.

1.2 The provisions of this Regulation shall not apply where the heat input capacity of the equipment is less than 1,000,000 BTU per hour.

1.3 The provisions of this regulation shall not apply to equipment or operations whose emissions are controlled by 7 **DE Admin. Code** 1105 or 7 **DE Admin. Code** 1107 or 7 **DE Admin. Code** 1129.

1.4 For purposes of this Regulation, the heat input value shall be based upon the manufacturer's guaranteed maximum input or the Department's calculated input capacity.

1.5 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 **DE Admin. Code** 1102.

17 DE Reg. 536 (11/01/13)

1/11/2017

2.0 Emission Limits

2.1 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum two-hour average, from any fuel burning equipment.

2.2 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum 30-day rolling average, from any fuel burning equipment.

12 DE Reg. 347 (09/01/08)

1104 Particulate Emissions from Fuel Burning Equipment

~~11/11/2013~~ xx/xx/2016

1.0 General Provisions

1.1 The emission of particulate matter from fuel burning equipment shall be controlled to a limit that shall meet the ambient air quality requirements.

1.2 The provisions of this Regulation shall not apply where the heat input capacity of the equipment is less than 1,000,000 BTU per hour.

1.3 The provisions of this regulation shall not apply to equipment or operations whose emissions are controlled by 7 **DE Admin. Code** 1105 or 7 **DE Admin. Code** 1107 or 7 **DE Admin. Code** 1129.

1.4 For purposes of this Regulation, the heat input value shall be based upon the manufacturer's guaranteed maximum input or the Department's calculated input capacity.

1.5 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 **DE Admin. Code** 1102.

17 DE Reg. 536 (11/01/13)

~~02/01/1981~~ xx/xx/2016

2.0 Emission Limits

2.1 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum two-hour average, from any fuel burning equipment.

2.2 No person shall cause or allow the emission of particulate matter in excess of 0.3 pound per million BTU heat input, maximum 30-day rolling average, from any fuel burning equipment.

12 DE Reg. 347 (09/01/08)

1105 Particulate Emissions from Industrial Process Operations

1/11/2017

1.0 General Provisions

1.1 The emission of particulate matter from industrial process equipment shall be controlled to a limit that shall meet the ambient air quality requirements.

1.2 The provisions of this Regulation shall not apply to indirect heat exchangers which shall be controlled by 7 **DE Admin. Code** 1104.

1.3 For all tables in this Regulation, unless otherwise indicated, the emission limitation for a process weight rate between any two consecutive process weight rates shall be determined by linear interpolation.

1.4 For all tables in this Regulation, unless otherwise indicated, the emission limitation for process weight rate above the maximum process weight rate or below the minimum process weight rate shall be determined by linear extrapolation.

1.5 For purposes of this Regulation, the allowable mass emission rate of particulate matter shall be determined for individual units of equipment.

1.6 For operations involving similar units which are manifolded to a common stack, control techniques shall be such that no unit is emitting particulate matter at a rate which is in excess of the mass emission rate allowed by this Regulation.

1.7 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 **DE Admin. Code** 1102.

1/11/2017

2.0 General Restrictions

2.1 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot.

2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30-day rolling average basis.

(Break in Continuity of Sections)

4.0 Restrictions on Secondary Metal Operations

4.1 No person shall cause or allow particulate emissions from secondary metal operations into the atmosphere in excess of the quantity as listed in Table 4-1 of this regulation.

Table 4-1
Allowable Mass Emission Rate From Secondary Metal Operations

Process Weight Rate (Pounds per Hour)	Stack Emission Rate (Pounds per Hour)
1,000	0.75
2,000	1.50
3,000	2.25
4,000	3.00
5,000	3.75
6,000	4.50
7,000	5.25
8,000	6.00
9,000	6.75
10,000	7.50
12,000	9.00
16,000	12.00
18,000	13.50
20,000	15.00
30,000	22.50
40,000	30.00
50,000	37.50

4.2 The provisions of subsection 4.1 of this regulation shall not apply to electric arc furnaces, and their associated dust-handling equipment, with a capacity of more than 100 tons.

5.0 Restrictions on Petroleum Refining Operations

5.1 No person shall cause or allow particulate emissions from catalytic cracking operations into the atmosphere in excess of the quantities as indicated in Table 5-1 of this regulation.

(Break in Continuity of Sections)

12 DE Reg. 347 (09/01/08)

1105 Particulate Emissions from Industrial Process Operations

~~02/01/1981~~ xx/11/2016

1.0 General Provisions

1.1 The emission of particulate matter from industrial process equipment shall be controlled to a limit that shall meet the ambient air quality requirements.

1.2 The provisions of this Regulation shall not apply to indirect heat exchangers which shall be controlled by 7 **DE Admin. Code** 1104.

1.3 For all tables in this Regulation, unless otherwise indicated, the emission limitation for a process weight rate between any two consecutive process weight rates shall be determined by linear interpolation.

1.4 For all tables in this Regulation, unless otherwise indicated, the emission limitation for process weight rate above the maximum process weight rate or below the minimum process weight rate shall be determined by linear extrapolation.

1.5 For purposes of this Regulation, the allowable mass emission rate of particulate matter shall be determined for individual units of equipment.

1.6 For operations involving similar units which are manifolded to a common stack, control techniques shall be such that no unit is emitting particulate matter at a rate which is in excess of the mass emission rate allowed by this Regulation.

1.7 The provisions of subsection 2.1 of this Regulation shall not apply to the start-up and shutdown of equipment which operates continuously or in an extended steady state when emissions from such equipment during start-up and shutdown are governed by an operation permit issued pursuant to the provisions of Section 2.0 of 7 **DE Admin. Code** 1102.

~~02/01/1981~~ xx/11/2016

2.0 General Restrictions

2.1 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot.

2.2 No person shall cause or allow particulate emissions into the atmosphere from any source not provided for in subsequent sections of this Regulation in excess of 0.2 grains per standard cubic foot on a 30-day rolling average basis.

(Break in Continuity of Sections)

~~02/01/1981~~xx/11/2016

4.0 Restrictions on Secondary Metal Operations

4.1 No person shall cause or allow particulate emissions from secondary metal operations into the atmosphere in excess of the quantity as listed in Table 4-1 of this regulation.

Table 4-1
Allowable Mass Emission Rate From Secondary Metal Operations

Process Weight Rate (Pounds per Hour)	Stack Emission Rate (Pounds per Hour)
1,000	0.75
2,000	1.50
3,000	2.25
4,000	3.00
5,000	3.75
6,000	4.50
7,000	5.25
8,000	6.00
9,000	6.75
10,000	7.50
12,000	9.00
16,000	12.00
18,000	13.50
20,000	15.00
30,000	22.50
40,000	30.00
50,000	37.50

4.2 The provisions of subsection 4.1 of this regulation shall not apply to electric arc furnaces, and their associated dust-handling equipment, with a capacity of more than 100 tons.

~~02/01/1981~~ xx/11/2016

5.0 Restrictions on Petroleum Refining Operations

5.1 No person shall cause or allow particulate emissions from catalytic cracking operations into the atmosphere in excess of the quantities as indicated in Table 5-1 of this regulation.

(Break in Continuity of Sections)

12 DE Reg. 347 (09/01/08)

1124 Control of Volatile Organic Compound Emissions

1.0 General Provisions

1/11/2017

(Break in Continuity of Sections)

1.4 Reserved

(Break in Continuity of Sections)

12 DE Reg. 347 (09/01/08)

1124 Control of Volatile Organic Compound Emissions

1.0 General Provisions

~~01/11/1993~~ xx/11/2016

(Break in Continuity of Sections)

~~1.4 The provisions of this regulation shall not apply to the startup and shutdown of equipment which operates continuously or in an extended steady-state when emissions from such equipment during startup and shutdown are governed by an Operating Permit issued pursuant to the provisions of 2.0 of **7 DE Admin. Code 1102**.~~

1.4 Reserved

(Break in Continuity of Sections)

12 DE Reg. 347 (09/01/08)

1142 Specific Emission Control Requirements

1/11/2017

1.0 Control of NO_x Emissions from Industrial Boilers

1.1 Purpose

New Castle County and Kent County are part of the Philadelphia-Wilmington-Trenton 1-hour ozone non-attainment area. All areas of Delaware impact this non-attainment area. On December 19, 1999, the EPA identified an emission reduction "shortfall" associated with this non-attainment area. Promulgation of Section 1.0 of this regulation is one measure that the Department is taking to mitigate this shortfall.

In determining the applicability of Section1.0 of this regulation, the Department attempted to minimize the impact on facilities that recently installed NO_x controls under 7 **DE Admin. Code** 1112 (NO_x RACT) and 7 **DE Admin. Code** 1137/1139 (NO_x Budget Trading Program). The Department did this by regulating only large sources that, as of the effective date of Section 1.0 of this regulation, emitted NO_X at a rate greater than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112, were not equipped with NO_x emission control technology, and were not subject to the requirements of 7 **DE Admin. Code** 1139. In effect, Section 1.0 of this regulation regulates sources that remain high NO_x emitters after the application of RACT and post RACT requirements, and that have not committed substantial capital funds to reduce NO_x emissions.

1.2 Applicability

1.2.1 The provisions of Section1.0 of this regulation apply to any person that owns or operates any combustion unit with a maximum heat input capacity of equal to or greater than 100 million btu per hour, except that Section1.0 of this regulation shall not apply to any unit that, as of the effective date of Section 1.0 of this regulation:

1.2.1.1 Emits NO_x at a rate equal to or less than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112.

1.2.1.2 Is equipped with low NO_x burner, flue gas recirculation, selective catalytic reduction, or selective non-catalytic reduction technology

.

1.2.1.3 Is subject to the requirements of 7 **DE Admin. Code** 1139.

1.2.2 The requirements of Section1.0 of this regulation are in addition to all other state and federal requirements.

1.2.3 Affected persons shall comply with the requirements of Section 1.3 of this regulation as soon as practicable, but no later than May 1, 2004.

1.3 Standards.

1.3.1 The NO_x emission rate from any unit subject to Section1.0 of this regulation shall be equal to or less than the following:

1.3.1.1 Between May 1st through September 30th of each year, inclusive: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.2 During all times that gaseous fuel is being fired: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.3 During all times not covered by 1.3.1.1 and 1.3.1.2 of this regulation: 0.25 lb/mmBTU, 24-hour calendar day average.

1.3.2 As an alternative to compliance with the requirements of subsection 1.3.1 of this regulation, compliance may be achieved through the procurement and retirement of NO_x allowances authorized for use under 7 **DE Admin. Code** 1139, as follows:

1.3.2.1 The actual 24-hour calendar day average NO_x emission rate in pounds per million btu shall be determined for each day of unit operation, using CEMs operated in accordance with subsection 1.4 of this regulation.

1.3.2.2 The actual heat input to each unit in million btu shall be determined for each day of unit operation, using methods proposed by the person subject to Section 1.0 of this regulation and acceptable to the Department.

1.3.2.3 0.10 or 0.25, as applicable and consistent with subsection 1.3.1 of this regulation, shall be subtracted from the rate determined in subsection 1.3.2.1 of this regulation.

1.3.2.4 To obtain the number of pounds of NO_x emitted for a particular day, the emission rate determined in subsection 1.3.2.3 of this regulation shall be multiplied by the heat input to the unit for that day determined in subsection 1.3.2.2 of this regulation. If the emission rate determined in subsection 1.3.2.3 of this regulation is equal to or less than zero, then the number of pounds of NO_x emitted for that day shall be zero.

1.3.2.5 Not later than the 20th day of each month:

1.3.2.5.1 The number of pounds of NO_x emissions calculated pursuant to subsection 1.3.2.4 of this regulation shall be summed for each calendar month, the result shall be divided by 2000, and shall be rounded to the nearest whole ton.

1.3.2.5.2 For each ton of NO_x emissions calculated pursuant to subsection 1.3.2.5.1 of this regulation, records shall be maintained demonstrating that one NO_x allowance owned by the person subject to Section 1.0 of this regulation is identified and available, by serial number, for retirement.

1.3.2.6 Not later than February 1 of each calendar year, the NO_x allowances identified pursuant to subsection 1.3.2.5.2 of this regulation for the previous calendar year, shall be submitted to the Department for retirement. Such submission shall detail the calculations specified in subsection 1.3.2.1 through subsection 1.3.2.5 of this regulation, and shall indicate the serial number of each allowance to be retired.

1.4 Monitoring Requirements. Compliance with the NO_x emission standards specified in Section 1.0 of this regulation shall be determined based on CEM data collected in accordance with the requirements of subsection 3.1.2 of 7 **DE Admin. Code** 1117 (Performance Specification 2), and in compliance with the requirements of 40 CFR, Part 60, Appendix F.

1.5 Recordkeeping and Reporting Requirements.

1.5.1 Not later than 180 days after the effective date of Section 1.0 of this regulation, any person subject to Section 1.0 of this regulation shall develop, and submit to the Department for approval, a schedule for bringing the affected emission unit or units into compliance with the requirements of Section 1.0 of this regulation. Such schedule shall include, at a minimum, all of the following:

1.5.1.1 The method by which compliance will be achieved

1.5.1.2 The dates by which the affected person commits to completing the following major increments of progress, as applicable:

1.5.1.2.1 Completion of engineering;

1.5.1.2.2 Submission of permit applications;

1.5.1.2.3 Awarding of contracts for construction or installation;

1.5.1.2.4 Initiation of construction;

1.5.1.2.5 Completion of construction;

1.5.1.2.6 Commencement of trial operation;

1.5.1.2.7 Initial compliance testing;

1.5.1.2.8 Submission of compliance testing reports;

1.5.1.2.9 Commencement of normal operations (in full compliance).

1.5.2 Any person subject to Section 1.0 of this regulation shall submit to the Department an initial compliance certification not later than May 1, 2004. The initial compliance certification shall, at a minimum, include the following information:

1.5.2.1 The name and the location of the facility.

1.5.2.2 The address and telephone number of the person responsible for the facility.

1.5.2.3 Identification of the subject source or sources.

1.5.2.4 The applicable standard.

1.5.2.5 The method of compliance.

1.5.2.6 Certification that each subject source is in compliance with the applicable standard.

1.5.2.7 All records necessary for determining compliance with the standards of Section 1.0 of this regulation shall be maintained at the facility for a period of five years.

1.5.3 Any person subject to Section 1.0 of this regulation shall, for each occurrence of excess emissions, within 30 calendar days of becoming aware of such occurrence, supply the Department with the following information:

1.5.3.1 The name and location of the facility.

1.5.3.2 The subject source or sources that caused the excess emissions.

1.5.3.3 The time and date of first observation of the excess emissions.

1.5.3.4 The cause and expected duration of the excess emissions.

1.5.3.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions.

1.5.3.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions

1.5.4 Any person subject to Section 1.0 of this regulation shall maintain all information necessary to demonstrate compliance with the requirements of Section 1.0 of this regulation for a minimum period of five years. Such information shall be immediately made available to the Department upon verbal and written request.

1/11/2017

2.0 Control of NO_x Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries

2.1 Purpose

2.1.1 The purpose of Section 2.0 of this regulation is to reduce NOX emissions from Delaware's large industrial boilers and process heaters that are located at petroleum refineries.

2.1.2 Under the 8-hour ozone national ambient air quality standard (NAAQS), the state of Delaware is part of the Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ moderate non-attainment area (NAA). The entire NAA, including Delaware, is required by the Clean Air Act (CAA) to attain the 8-hour ozone NAAQS by 2010. After attainment, the area must maintain compliance with the NAAQS. By implementing Section 2.0 of this regulation, NOx emission reductions from the affected boilers and heaters shall contribute to (1) attainment and maintenance of the 8-hour ozone standard, and (2) improvement of the ambient air quality, in both Delaware and the entire NAA.

2.1.3 Additionally, New Castle County of Delaware is a part of the Philadelphia-Wilmington-Camden, PA-DE-NJ NAA for the annual fine particulate matter ($PM_{2.5}$) NAAQS, and is required by the CAA to attain the NAAQS by 2010. Since NOx is a significant precursor to $PM_{2.5}$ formation, reducing NOx emissions will also assist in attainment and maintenance of the $PM_{2.5}$ standard.

2.2 Applicability and Compliance Dates

2.2.1 Section 2.0 of this regulation applies to any industrial boiler or process heater with a maximum heat input capacity of equal to or greater than 200 million BTUs per hour (mmBTU/Hour), which is operated or permitted to operate within a petroleum refinery facility on July 11, 2007. This comprises the following ten (10) units at the Delaware City refinery:

2.2.1.1 Crude Unit Vacuum Heater (Unit 21-H-2);

2.2.1.2 Crude Unit Atmospheric Heater (Unit 21-H-701);

2.2.1.3 Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3);

2.2.1.4 Steam Methane Reformer Heater (Unit 37-H-1);

2.2.1.5 Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1,2,3);

2.2.1.6 Boiler 1 (Unit 80-1);

2.2.1.7 Boiler 2 (Unit 80-2);

2.2.1.8 Boiler 3 (Unit 80-3);

2.2.1.9 Boiler 4 (Unit 80-4).

2.2.1.10 Fluid Catalytic Cracking Unit Carbon Monoxide (CO) boiler (Unit 23-H-3).

2.2.2 The requirements of Section 2.0 of this regulation are in addition to all other state and federal requirements.

2.2.3 The following units shall be in compliance with the requirements of Section 2.0 of this regulation on and after July 11, 2007: Crude Unit Atmospheric Heater (Unit 21-H-701), Steam Methane Reformer Heater (Unit 37-H-1) and Boiler 2 (Unit 80-2).

2.2.4 The following units shall be in compliance with the requirements of Section 2.0 of this regulation as soon as practicable, but not later than:

2.2.4.1 December 31, 2008: Boiler 1 (Unit 80-1) and Crude Unit vacuum Heater (Unit 21-H-2), and Fluid Catalytic Cracking Unit CO boiler (Unit 42-H-1, 2, 3).

2.2.4.2 May 1, 2011: Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4).

2.2.4.3 December 31, 2012: Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1, 2, 3).

2.3 Standards.

The owner or operator of any industrial boiler or process heater identified in subsection 2.2.1 of this regulation shall meet the applicable NO_x emission limitation identified in the following sections:

2.3.1 Except as provided for in subsection 2.3.2 of this regulation, the owner or operator of any industrial boiler or process heater identified in subsection 2.2.1 of this regulation shall not operate except in compliance with the applicable NO_x emission limitation identified in the following sections:

2.3.1.1 For the Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3), Reserved.

2.3.1.2 For the Steam Methane Reformer (SMR) Heater (Unit 37-H-1), Reserved.

2.3.1.3 For Boiler 1 (Unit 80-1), Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4), 0.015 lb/mmBTU, on a 24-hour rolling average basis.

2.3.1.4 For the Fluid Catalytic Cracking Unit CO boiler (Unit 23-H-3), 20 ppmvd @ 0 % O2 on a 365 day rolling average basis, and 40 ppmvd @ 0 % O2 on a 7-day rolling average basis.

2.3.1.5 For any unit not covered by subsections 2.3.1.1, 2.3.1.2, or 2.3.1.3, or 2.3.1.4 0.04 lb/mmBTU, on a 24-hour rolling average basis.

2.3.2 As an alternative to complying with one or more of the unit specific emission limitations specified in subsection 2.3.1 of this regulation the owner or operator of any industrial boiler or process heater identified in subsection 2.2.1 of this regulation shall limit the NO_x emissions, from all NO_x emission sources at the facility, to equal to or less than the applicable emission cap specified in subsection 2.3.2.1 through subsection 2.3.2.3 of this regulation.

2.3.2.1 2,525 tons per year, evaluated over each twelve (12) consecutive month rolling period, for each twelve (12) month rolling period commencing with the rolling twelve (12) consecutive month period comprised by calendar year (CY) 2011 and ending with the twelve (12) consecutive month rolling period that ends on December 31, 2013.

2.3.2.2 2,225 tons per year, evaluated over each twelve (12) consecutive month rolling period, comprising calendar year 2014.

2.3.2.3 1,650 tons per year, evaluated over each twelve (12) consecutive month rolling period, commencing with the twelve (12) month rolling period beginning on January 1, 2015 and ending on December 31, 2015, and continuing thereafter.

2.3.3 Neither the provisions of subsection 2.3.2, nor this regulation more generally, shall limit in any way the Department's authority to establish a lower NO_x emission cap and more stringent NOx emission limitations for any source subject to this regulation.

2.4 Compliance Requirements.

2.4.1 Compliance with the NO_x emission standards specified in subsection 2.3.1 of this regulation shall be determined based on CEM data collected in accordance with the appropriate requirements set forth in 40 CFR, Part 60, Appendix B, Performance Specification 2, and the QA/QC requirements in 40 CFR Part 60, Appendix F.

2.4.2 Compliance with the facility-wide NO_x emission cap specified in subsection 2.3.2 of this regulation shall be determined not later than the last day of each month, as follows.

2.4.2.1 The mass of NO_x (tons) emitted during the prior month from each emission source at the facility subject to the NO_x cap shall be accurately determined using the methods specified in subsection 2.4.2.1.1 through subsection 2.4.2.1.3 of this regulation, as approved by the Department.

2.4.2.1.1 Continuous emission monitoring systems (CEMS) that meet the requirements of subsection 2.4.1 of this regulation.

2.4.2.1.2 A NO_x emission factor that is based upon the results of the most recent performance testing conducted in accordance with a protocol approved by the Department.

2.4.2.1.3 Published NO_x emission factors for such source or category of sources, or any other method approvable by the Department.

2.4.2.2 NO_x emissions from each NO_x emission source at the facility shall be determined for all periods of startup, shutdown or malfunction. To the extent that such emissions are not measured by CEMS during such periods of startup, shutdown or malfunction, and to the further extent that performance testing for such source did not establish emission factors for such equipment reflective of operations during periods of startup, shutdown or malfunction, then the owner or operator shall estimate such emission rates from such source during any periods of startup, shutdown or malfunction in accordance with best engineering judgment.

2.4.2.3 The emissions calculated in subsection 2.4.2.1 and subsection 2.4.2.2 of this regulation shall be summed and aggregated with the calculation results for the preceding months as provided for in subsection 2.4.2.3.1 through subsection 2.4.2.3.4 below.

2.4.2.3.1 For any month before January 2014, the preceding eleven (11) consecutive months shall be included. No emissions occurring before January 1, 2011 shall be included.

2.4.2.3.2 For any month in calendar year 2014, only months in calendar year 2014 shall be included.

2.4.2.3.3 For any month in calendar year 2015, only months in calendar year 2015 shall be included.

2.4.2.3.4 For any month after December 31, 2015, the preceding eleven (11) consecutive months shall be included.

2.4.2.4 Compliance shall be determined by comparing the results of the calculations in subsection 2.4.2.3 of this regulation with the appropriate NO_x emission cap specified in subsection 2.3.2 of this regulation. Following aggregation and summation of emission in accordance with subsection 2.4.2.3, fractions of tons shall be rounded up to the next higher number.

2.5 Recordkeeping and Reporting Requirements

2.5.1 Not later than October 7, 2011, any person subject to Section 2.0 of this regulation shall develop, and submit to the Department, a schedule for bringing the facility into compliance with the requirements of subsection 2.3 of this regulation. Such schedule shall include, at a minimum, all of the following:

2.5.1.1 The method by which compliance will be achieved.

2.5.1.2 For persons subject to the requirements of subsection 2.3.1 of this regulation, the dates by which the affected person plans to complete the following major increments of progress, as applicable:

2.5.1.2.1 Completion of engineering;

2.5.1.2.2 Submission of permit applications;

2.5.1.2.3 Awarding of contracts for construction and/or installation;

2.5.1.2.4 Initiation of construction;

2.5.1.2.5 Completion of construction;

2.5.1.2.6 Commencement of trial operation;

2.5.1.2.7 Initial compliance testing;

2.5.1.2.8 Submission of compliance testing reports;

2.5.1.2.9 Commencement of normal operations (in full compliance).

2.5.2 For persons subject to the requirements of subsection 2.3.2 of this regulation, the owner or operator shall submit to the Department an initial notice that contains all of the information specified in subsection 2.5.2.1 and subsection 2.5.2.2 of this regulation.

2.5.2.1 The date that compliance with this regulation will begin pursuant to subsection 2.3.2 of this regulation. A permit application submitted pursuant to 7 **DE Admin. Code** 1102 or 1130 that contains this information may be used as a means to satisfy this requirement.

2.5.2.2 A list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.3 Any person subject to the requirements of subsection 2.3.1 of this regulation shall submit to the Department an initial compliance certification by the later of the following dates, or the date the unit first operates after the following date subject to the requirements of subsection 2.3.1: September 10, 2007 for units identified in subsection 2.2.3 of this regulation and, for units identified in subsection 2.2.4, by the compliance date specified in subsection 2.2.4. The initial compliance certification shall include, at a minimum, all of the following information:

2.5.3.1 The name and the location of the facility;

2.5.3.2 The name, address and telephone number of the person responsible for the facility;

2.5.3.3 Identification of the subject source(s);

2.5.3.4 The applicable standard;

2.5.3.5 The method of compliance;

2.5.3.6 Certification that each subject source is in compliance with the applicable standard.

2.5.4 Any person subject to the requirements of subsection 2.3.2 of this regulation shall submit to the Department a semi-annual report by January 31 and July 31 of each calendar year that contains all of the information specified in subsection 2.5.4.1 through subsection 2.5.4.5 of this regulation. At the request of the owner or operator, the Department may change the frequency of such reporting requirements, as may be necessary to harmonize them with reporting requirements of 7 **DE Admin. Code** 1130, Title V Operating Permits Program.

2.5.4.1 The identification of owner and operator of the facility.

2.5.4.2 A report of the monthly NOx emissions for each source, the basis for determination of the emissions pursuant to subsection 2.4.2.1, and comparison of the rolling total NOx emissions from the facility with the appropriate NOx emission cap that was made pursuant to subsection 2.4.2.4 of this regulation, for each month in the reporting period.

2.5.4.3 An updated list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.5 Any person subject to Section 2.0 of this regulation shall, for each occurrence of excess emissions above the standards of subsection 2.3 of this regulation, including periods when monitoring data was not collected in accordance with procedures approved pursuant to subsection 2.4.2.1 of this regulation, within thirty (30) calendar days of becoming aware of such occurrence, supply the Department with the following information:

2.5.5.1 The name and location of the facility;

2.5.5.2 The subject source(s) that caused the excess emissions;

2.5.5.3 The time and date of first observation of the excess emissions;

2.5.5.4 The cause and expected duration of the excess emissions;

2.5.5.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions;

2.5.5.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

2.5.6 Any person subject to Section 2.0 of this regulation shall maintain all information necessary to determine and demonstrate compliance with the requirements of this section for a minimum period of five (5) years. Such information shall be immediately made available to the Department upon verbal and written request.

5 DE Reg. 1299 (12/01/01)
11 DE Reg. 75 (07/01/07)
12 DE Reg. 347 (09/01/08)
13 DE Reg. 670 (11/01/09)
14 DE Reg. 1092 (04/01/11)

1142 Specific Emission Control Requirements

~~12/12/2001~~ xx/11/2016

1.0 Control of NO_x Emissions from Industrial Boilers

1.1 Purpose

New Castle County and Kent County are part of the Philadelphia-Wilmington-Trenton 1-hour ozone non-attainment area. All areas of Delaware impact this non-attainment area. On December 19, 1999, the EPA identified an emission reduction "shortfall" associated with this non-attainment area. Promulgation of Section 1.0 of this regulation is one measure that the Department is taking to mitigate this shortfall.

In determining the applicability of Section1.0 of this regulation, the Department attempted to minimize the impact on facilities that recently installed NO_x controls under 7 **DE Admin. Code** 1112 (NO_x RACT) and 7 **DE Admin. Code** 1137/1139 (NO_x Budget Trading Program). The Department did this by regulating only large sources that, as of the effective date of Section 1.0 of this regulation, emitted NO_X at a rate greater than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112, were not equipped with NO_x emission control technology, and were not subject to the requirements of 7 **DE Admin. Code** 1139. In effect, Section 1.0 of this regulation regulates sources that remain high NO_x emitters after the application of RACT and post RACT requirements, and that have not committed substantial capital funds to reduce NO_x emissions.

1.2 Applicability

1.2.1 The provisions of Section1.0 of this regulation apply to any person that owns or operates any combustion unit with a maximum heat input capacity of equal to or greater than 100 million btu per hour, except that Section1.0 of this regulation shall not apply to any unit that, as of the effective date of Section 1.0 of this regulation:

1.2.1.1 Emits NO_x at a rate equal to or less than the rate identified in Table 3-1 of 7 **DE Admin. Code** 1112.

1.2.1.2 Is equipped with low NO_x burner, flue gas recirculation, selective catalytic reduction, or selective non-catalytic reduction technology

.

1.2.1.3 Is subject to the requirements of 7 **DE Admin. Code** 1139.

1.2.2 The requirements of Section1.0 of this regulation are in addition to all other state and federal requirements.

1.2.3 Affected persons shall comply with the requirements of Section 1.3 of this regulation as soon as practicable, but no later than May 1, 2004.

1.3 Standards.

1.3.1 The NO_x emission rate from any unit subject to Section1.0 of this regulation shall be equal to or less than the following:

1.3.1.1 Between May 1st through September 30th of each year, inclusive: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.2 During all times that gaseous fuel is being fired: 0.10 lb/mmBTU, 24-hour calendar day average.

1.3.1.3 During all times not covered by 1.3.1.1 and 1.3.1.2 of this regulation: 0.25 lb/mmBTU, 24-hour calendar day average.

1.3.2 As an alternative to compliance with the requirements of subsection 1.3.1 of this regulation, compliance may be achieved through the procurement and retirement of NO_x allowances authorized for use under 7 **DE Admin. Code** 1139, as follows:

1.3.2.1 The actual 24-hour calendar day average NO_x emission rate in pounds per million btu shall be determined for each day of unit operation, using CEMs operated in accordance with subsection 1.4 of this regulation.

1.3.2.2 The actual heat input to each unit in million btu shall be determined for each day of unit operation, using methods proposed by the person subject to Section 1.0 of this regulation and acceptable to the Department.

1.3.2.3 0.10 or 0.25, as applicable and consistent with subsection 1.3.1 of this regulation, shall be subtracted from the rate determined in subsection 1.3.2.1 of this regulation.

1.3.2.4 To obtain the number of pounds of NO_x emitted for a particular day, the emission rate determined in subsection 1.3.2.3 of this regulation shall be multiplied by the heat input to the unit for that day determined in subsection 1.3.2.2 of this regulation. If the emission rate determined in subsection 1.3.2.3 of this regulation is equal to or less than zero, then the number of pounds of NO_x emitted for that day shall be zero.

1.3.2.5 Not later than the 20th day of each month:

1.3.2.5.1 The number of pounds of NO_x emissions calculated pursuant to subsection 1.3.2.4 of this regulation shall be summed for each calendar month, the result shall be divided by 2000, and shall be rounded to the nearest whole ton.

1.3.2.5.2 For each ton of NO_x emissions calculated pursuant to subsection 1.3.2.5.1 of this regulation, records shall be maintained demonstrating that one NO_x allowance owned by the person subject to Section 1.0 of this regulation is identified and available, by serial number, for retirement.

1.3.2.6 Not later than February 1 of each calendar year, the NO_x allowances identified pursuant to subsection 1.3.2.5.2 of this regulation for the previous calendar year, shall be submitted to the Department for retirement. Such submission shall detail the calculations specified in subsection 1.3.2.1 through subsection 1.3.2.5 of this regulation, and shall indicate the serial number of each allowance to be retired.

1.4 Monitoring Requirements. Compliance with the NO_x emission standards specified in Section 1.0 of this regulation shall be determined based on CEM data collected in accordance with the requirements of subsection 3.1.2 of 7 **DE Admin. Code** 1117 (Performance Specification 2), and in compliance with the requirements of 40 CFR, Part 60, Appendix F.

1.5 Recordkeeping and Reporting Requirements.

1.5.1 Not later than 180 days after the effective date of Section 1.0 of this regulation, any person subject to Section 1.0 of this regulation shall develop, and submit to the Department for approval, a schedule for bringing the affected emission unit or units into compliance with the requirements of Section 1.0 of this regulation. Such schedule shall include, at a minimum, all of the following:

1.5.1.1 The method by which compliance will be achieved

1.5.1.2 The dates by which the affected person commits to completing the following major increments of progress, as applicable:

1.5.1.2.1 Completion of engineering;

1.5.1.2.2 Submission of permit applications;

1.5.1.2.3 Awarding of contracts for construction or installation;

1.5.1.2.4 Initiation of construction;

1.5.1.2.5 Completion of construction;

1.5.1.2.6 Commencement of trial operation;

1.5.1.2.7 Initial compliance testing;

1.5.1.2.8 Submission of compliance testing reports;

1.5.1.2.9 Commencement of normal operations (in full compliance).

1.5.2 Any person subject to Section 1.0 of this regulation shall submit to the Department an initial compliance certification not later than May 1, 2004. The initial compliance certification shall, at a minimum, include the following information:

1.5.2.1 The name and the location of the facility.

1.5.2.2 The address and telephone number of the person responsible for the facility.

1.5.2.3 Identification of the subject source or sources.

1.5.2.4 The applicable standard.

1.5.2.5 The method of compliance.

1.5.2.6 Certification that each subject source is in compliance with the applicable standard.

1.5.2.7 All records necessary for determining compliance with the standards of Section 1.0 of this regulation shall be maintained at the facility for a period of five years.

1.5.3 Any person subject to Section 1.0 of this regulation shall, for each occurrence of excess emissions, within 30 calendar days of becoming aware of such occurrence, supply the Department with the following information:

1.5.3.1 The name and location of the facility.

1.5.3.2 The subject source or sources that caused the excess emissions.

1.5.3.3 The time and date of first observation of the excess emissions.

1.5.3.4 The cause and expected duration of the excess emissions.

1.5.3.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions.

1.5.3.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions

1.5.4 Any person subject to Section 1.0 of this regulation shall maintain all information necessary to demonstrate compliance with the requirements of Section 1.0 of this regulation for a minimum period of five years. Such information shall be immediately made available to the Department upon verbal and written request.

~~04/11/2011~~ xx/11/2016

2.0 Control of NO_x Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries

2.1 Purpose

2.1.1 The purpose of Section 2.0 of this regulation is to reduce NOX emissions from Delaware's large industrial boilers and process heaters that are located at petroleum refineries.

2.1.2 Under the 8-hour ozone national ambient air quality standard (NAAQS), the state of Delaware is part of the Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ moderate non-attainment area (NAA). The entire NAA, including Delaware, is required by the Clean Air Act (CAA) to attain the 8-hour ozone NAAQS by 2010. After attainment, the area must maintain compliance with the NAAQS. By implementing Section 2.0 of this regulation, NOx emission reductions from the affected boilers and heaters shall contribute to (1) attainment and maintenance of the 8-hour ozone standard, and (2) improvement of the ambient air quality, in both Delaware and the entire NAA.

2.1.3 Additionally, New Castle County of Delaware is a part of the Philadelphia-Wilmington-Camden, PA-DE-NJ NAA for the annual fine particulate matter ($PM_{2.5}$) NAAQS, and is required by the CAA to attain the NAAQS by 2010. Since NOx is a significant precursor to $PM_{2.5}$ formation, reducing NOx emissions will also assist in attainment and maintenance of the $PM_{2.5}$ standard.

2.2 Applicability and Compliance Dates

2.2.1 Section 2.0 of this regulation applies to any industrial boiler or process heater with a maximum heat input capacity of equal to or greater than 200 million BTUs per hour (mmBTU/Hour), which is operated or permitted to operate within a petroleum refinery facility on July 11, 2007. This comprises the following ten (10) units at the Delaware City refinery:

2.2.1.1 Crude Unit Vacuum Heater (Unit 21-H-2);

2.2.1.2 Crude Unit Atmospheric Heater (Unit 21-H-701);

2.2.1.3 Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3);

2.2.1.4 Steam Methane Reformer Heater (Unit 37-H-1);

2.2.1.5 Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1,2,3);

2.2.1.6 Boiler 1 (Unit 80-1);

2.2.1.7 Boiler 2 (Unit 80-2);

2.2.1.8 Boiler 3 (Unit 80-3);

2.2.1.9 Boiler 4 (Unit 80-4).

2.2.1.10 Fluid Catalytic Cracking Unit Carbon Monoxide (CO) boiler (Unit 23-H-3).

2.2.2 The requirements of Section 2.0 of this regulation are in addition to all other state and federal requirements.

2.2.3 The following units shall be in compliance with the requirements of Section 2.0 of this regulation on and after July 11, 2007: Crude Unit Atmospheric Heater (Unit 21-H-701), Steam Methane Reformer Heater (Unit 37-H-1) and Boiler 2 (Unit 80-2).

2.2.4 The following units shall be in compliance with the requirements of Section 2.0 of this regulation as soon as practicable, but not later than:

2.2.4.1 December 31, 2008: Boiler 1 (Unit 80-1) and Crude Unit vacuum Heater (Unit 21-H-2), and Fluid Catalytic Cracking Unit CO boiler (Unit 42-H-1, 2, 3).

2.2.4.2 May 1, 2011: Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4).

2.2.4.3 December 31, 2012: Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1, 2, 3).

2.3 Standards.

The owner or operator of any industrial boiler or process heater identified in subsection ~~Section~~ 2.2.1 of this regulation shall meet the applicable NO_x emission limitation identified in the following sections:

2.3.1 Except as provided for in subsection 2.3.2 of this regulation, the owner or operator of any industrial boiler or process heater identified in ~~Section~~ subsection 2.2.1 of this regulation shall not operate except in compliance with the applicable NO_x emission limitation identified in the following sections:

2.3.1.1 For the Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3), Reserved.

2.3.1.2 For the Steam Methane Reformer (SMR) Heater (Unit 37-H-1), Reserved.

2.3.1.3 For Boiler 1 (Unit 80-1), Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4), 0.015 lb/mmBTU, on a 24-hour rolling average basis.

2.3.1.4 For the Fluid Catalytic Cracking Unit CO boiler (Unit 23-H-3), 20 ppmvd @ 0 % O2 on a 365 day rolling average basis, and 40 ppmvd @ 0 % O2 on a 7-day rolling average basis.

2.3.1.5 For any unit not covered by subsections 2.3.1.1, 2.3.1.2, or 2.3.1.3, or 2.3.1.4 0.04 lb/mmBTU, on a 24-hour rolling average basis.

~~2.3.1.6 The standards set out in 2.3 of this regulation shall not apply to the start-up and shutdown of equipment when emissions from such equipment during a start-up and shutdown are addressed in an operation permit issued pursuant to the provisions of 7 **DE Admin.** Code 1102~~.

2.3.2 As an alternative to complying with one or more of the unit specific emission limitations specified in subsection 2.3.1 of this regulation the owner or operator of any industrial boiler or process heater identified in ~~Section~~ subsection 2.2.1 of this regulation shall limit the NO_x emissions, from all NO_x emission sources at the facility, to equal to or less than the applicable emission cap specified in subsection 2.3.2.1 ~~though~~ through subsection 2.3.2.3 of this regulation.

2.3.2.1 2,525 tons per year, evaluated over each twelve (12) consecutive month rolling period, for each twelve (12) month rolling period commencing with the rolling twelve (12) consecutive month period comprised by calendar year (CY) 2011 and ending with the twelve (12) consecutive month rolling period that ends on December 31, 2013.

2.3.2.2 2,225 tons per year, evaluated over each twelve (12) consecutive month rolling period, comprising calendar year 2014.

2.3.2.3 1,650 tons per year, evaluated over each twelve (12) consecutive month rolling period, commencing with the twelve (12) month rolling period beginning on January 1, 2015 and ending on December 31, 2015, and continuing thereafter.

2.3.3 Neither the provisions of ~~Section~~ subsection 2.3.2, nor this regulation more generally, shall limit in any way the Department's authority to establish a lower NO_x emission cap and more stringent NOx emission limitations for any source subject to this regulation.

2.3 Compliance Requirements.

2.4.1 Compliance with the NO_x emission standards specified in subsection 2.3.1 of this regulation shall be determined based on CEM data collected in accordance with the appropriate requirements set forth in 40 CFR, Part 60, Appendix B, Performance Specification 2, and the QA/QC requirements in 40 CFR Part 60, Appendix F.

2.4.2 Compliance with the facility-wide NO_x emission cap specified in subsection 2.3.2 of this regulation shall be determined not later than the last day of each month, as follows.

2.4.2.1 The mass of NO_x (tons) emitted during the prior month from each emission source at the facility subject to the NO_x cap shall be accurately determined using the methods specified in subsection 2.4.2.1.1 through subsection 2.4.2.1.3 of this regulation, as approved by the Department.

2.4.2.1.1 Continuous emission monitoring systems (CEMS) that meet the requirements of subsection 2.4.1 of this regulation.

2.4.2.1.2 A NO_x emission factor that is based upon the results of the most recent performance testing conducted in accordance with a protocol approved by the Department**.**

2.4.2.1.3 Published NO_x emission factors for such source or category of sources, or any other method approvable by the Department.

2.4.2.2 NO_x emissions from each NO_x emission source at the facility shall be determined for all periods of startup, shutdown or malfunction. To the extent that such emissions are not measured by CEMS during such periods of startup, shutdown or malfunction, and to the further extent that performance testing for such source did not establish emission factors for such equipment reflective of operations during periods of startup, shutdown or malfunction, then the owner or operator shall estimate such emission rates from such source during any periods of startup, shutdown or malfunction in accordance with best engineering judgment.

2.4.2.3 The emissions calculated in subsection 2.4.2.1 and subsection 2.4.2.2 of this regulation shall be summed and aggregated with the calculation results for the preceding months as provided for in subsection 2.4.2.3.1 through subsection 2.4.2.3.4 below.

2.4.2.3.1 For any month before January 2014, the preceding eleven (11) consecutive months shall be included. No emissions occurring before January 1, 2011 shall be included.

2.4.2.3.2 For any month in calendar year 2014, only months in calendar year 2014 shall be included.

2.4.2.3.3 For any month in calendar year 2015, only months in calendar year 2015 shall be included.

2.4.2.3.4 For any month after December 31, 2015, the preceding eleven (11) consecutive months shall be included.

2.4.2.4 Compliance shall be determined by comparing the results of the calculations in subsection 2.4.2.3 of this regulation with the appropriate NO_x emission cap specified in subsection 2.3.2 of this regulation. Following aggregation and summation of emission in accordance with subsection 2.4.2.3, fractions of tons shall be rounded up to the next higher number.

2.4 Recordkeeping and Reporting Requirements

2.5.1 Not later than October 7, 2011, any person subject to Section 2.0 of this regulation shall develop, and submit to the Department, a schedule for bringing the facility into compliance with the requirements of ~~Section~~ subsection 2.3 of this regulation. Such schedule shall include, at a minimum, all of the following:

2.5.1.1 The method by which compliance will be achieved.

2.5.1.2 For persons subject to the requirements of subsection 2.3.1 of this regulation, the dates by which the affected person plans to complete the following major increments of progress, as applicable:

2.5.1.2.1 Completion of engineering;

2.5.1.2.2 Submission of permit applications;

2.5.1.2.3 Awarding of contracts for construction and/or installation;

2.5.1.2.4 Initiation of construction;

2.5.1.2.5 Completion of construction;

2.5.1.2.6 Commencement of trial operation;

2.5.1.2.7 Initial compliance testing;

2.5.1.2.8 Submission of compliance testing reports;

2.5.1.2.9 Commencement of normal operations (in full compliance).

2.5.2 For persons subject to the requirements of subsection 2.3.2 of this regulation, the owner or operator shall submit to the Department an initial notice that contains all of the information specified in subsection 2.5.2.1 and subsection 2.5.2.2 of this regulation.

2.5.2.1 The date that compliance with this regulation will begin pursuant to subsection 2.3.2 of this regulation. A permit application submitted pursuant to 7 **DE Admin. Code** 1102 or 1130 that contains this information may be used as a means to satisfy this requirement.

2.5.2.2 A list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.3 Any person subject to the requirements of subsection 2.3.1 of this regulation shall submit to the Department an initial compliance certification by the later of the following dates, or the date the unit first operates after the following date subject to the requirements of subsection 2.3.1: September 10, 2007 for units identified in ~~Section~~ subsection 2.2.3 of this regulation and, for units identified in ~~Section~~ subsection 2.2.4, by the compliance date specified in ~~Section~~ subsection 2.2.4. The initial compliance certification shall include, at a minimum, all of the following information:

2.5.3.1 The name and the location of the facility;

2.5.3.2 The name, address and telephone number of the person responsible for the facility;

2.5.3.3 Identification of the subject source(s);

2.5.3.4 The applicable standard;

2.5.3.5 The method of compliance;

2.5.3.6 Certification that each subject source is in compliance with the applicable standard.

2.5.4 Any person subject to the requirements of subsection 2.3.2 of this regulation shall submit to the Department a semi-annual report by January 31 and July 31 of each calendar year that contains all of the information specified in subsection 2.5.4.1 through subsection 2.5.4.5 of this regulation. At the request of the owner or operator, the Department may change the frequency of such reporting requirements, as may be necessary to harmonize them with reporting requirements of 7 **DE Admin. Code** 1130, Title V Operating Permits Program.

2.5.4.1 The identification of owner and operator of the facility.

2.5.4.2 A report of the monthly NOx emissions for each source, the basis for determination of the emissions pursuant to subsection 2.4.2.1, and comparison of the rolling total NOx emissions from the facility with the appropriate NOx emission cap that was made pursuant to subsection 2.4.2.4 of this regulation, for each month in the reporting period.

2.5.4.3 An updated list of the emission units at the facility that are required to be included in the facility-wide NO_x cap.

2.5.5 Any person subject to Section 2.0 of this regulation shall, for each occurrence of excess emissions above the standards of ~~Section~~ subsection 2.3 of this regulation, including periods when monitoring data was not collected in accordance with procedures approved pursuant to subsection 2.4.2.1 of this regulation, within thirty (30) calendar days of becoming aware of such occurrence, supply the Department with the following information:

2.5.5.1 The name and location of the facility;

2.5.5.2 The subject source(s) that caused the excess emissions;

2.5.5.3 The time and date of first observation of the excess emissions;

2.5.5.4 The cause and expected duration of the excess emissions;

2.5.5.5 The estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions;

2.5.5.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

2.5.6 Any person subject to Section 2.0 of this regulation shall maintain all information necessary to determine and demonstrate compliance with the requirements of this section for a minimum period of five (5) years. Such information shall be immediately made available to the Department upon verbal and written request.

5 DE Reg. 1299 (12/01/01)
11 DE Reg. 75 (07/01/07)
12 DE Reg. 347 (09/01/08)
13 DE Reg. 670 (11/01/09)
14 DE Reg. 1092 (04/01/11)